

SKILLS FOR EVIDENCE-INFORMED POLICY MAKING: CONTINUOUS PROFESSIONAL DEVELOPMENT FRAMEWORK

In the age of ever-increasing knowledge, there is an urgent need for effective knowledge management and sense-making. Effective knowledge management for policy, scientific advice to policy and evidence-informed policymaking are synonymous values which underpin a need for a new profession with a collective skillset.

The aim of this paper is to discuss the **continuous professional development framework** addressing the **practical skillset** needed to increase the **impact of research evidence on policymaking**. The primary focus is on the **collective skillset of the new knowledge brokers (researchers and policymakers) in boundary-spanning organisations at the evidence-policy interface**. Changes in individual behaviours will not be sufficient if enabling organisational and contextual environments do not follow. Paying close attention to the needs and skills of policymakers (including civil servants at strategic and operational level, but not politicians) is equally important to that of researchers (including researchers and research managers). Whether producing scientific knowledge or developing policy, both sides involved with evidence require a **collective skillset** to address the challenges of this field.

As the European Commission's science and knowledge service, the Joint Research Centre (JRC) is in a good position to experiment with approaches for more evidence-informed policymaking.

This paper draws on competencies already identified, i.a. by the Alliance for Useful Evidence (['Using Evidence: What Works?'](#)), INGSA, INASP, OECD or colleagues across the JRC. It also draws on the discussions between leading experts convened for a 1-day workshop in Brussels by the JRC on March 17, 2017. The discussions at the workshop were centred on two themes: 1) the professional skills needed in organisations working at the evidence-policy interface; and 2) best practices in training to strengthen or introduce these skills in knowledge brokering and receiving organisations. The central themes recurring during the workshop were the **co-creation and brokering** of knowledge for policy, stimulating the **motivation** to use evidence in policy and the ability to turn scientific results into **stories** with implications for policy.

Continuous Professional Development Framework

As informing policy through evidence is a non-linear process constituting only a fraction of the broader policy influences and processes, the set of **collective skills** needed to perform in this area is fairly broad. The professional development framework consists of **eight skills clusters** (may be subdivided with different courses), each cluster addressing a specific part of the collective skillset required to increase the impact of research evidence on policymaking:

- **Understanding Policy & Science.** Effective researchers understand the key drivers of the policy process – which can never be as simple as a policy cycle – and adapt their evidence presentation strategies to the policy context. Effective policymakers anticipate what evidence will be needed in the future.

- **Interpersonal Skills.** Being able to interact well with others – using verbal and non-verbal communication skills - is essential to building trust and solving problems that occur in creating and applying knowledge to policymaking.
- **Synthesising Research.** Effective knowledge management will provide policymakers with access to more robust and fit-for-purpose evidence. Effective researchers employ methods and tools to make better sense of the wealth of knowledge ('secondary research') available on a given topic.
- **Managing Collaborative Expert Communities.** 'Communities' of experts, sharing a common language or understanding, are fundamental to creating and applying knowledge to complex problems. Effective researchers develop networking and facilitation skills, through digital and physical interactions, to reduce disciplinary and policy divides.
- **Communicating Scientific Knowledge.** The communication of research to a non-scientific audience requires effective communication skills, using content-related tools like infographic design, succinct writing, public speaking and data visualisation tailored to the audience.
- **Advising Policymakers.** Effective science policy advisors go beyond simply communicating research evidence towards identifying options, helping to understand the impact of policy choices during and after implementation, and providing policy advice from a scientific viewpoint.
- **Engaging with Citizens & Stakeholders:** Engagement with the public (individual citizens) and stakeholders (organisations) can provide a constructive platform for citizens and social actors' views to be combined with scientific expertise in policymaking contexts increasing the relevance and impact of the scientific evidence provided.
- **Monitoring & Evaluation Framework.** Monitoring and evaluating the impact of research evidence on policymaking is a specific skill needed to continuously improve the impact of evidence on policymaking.

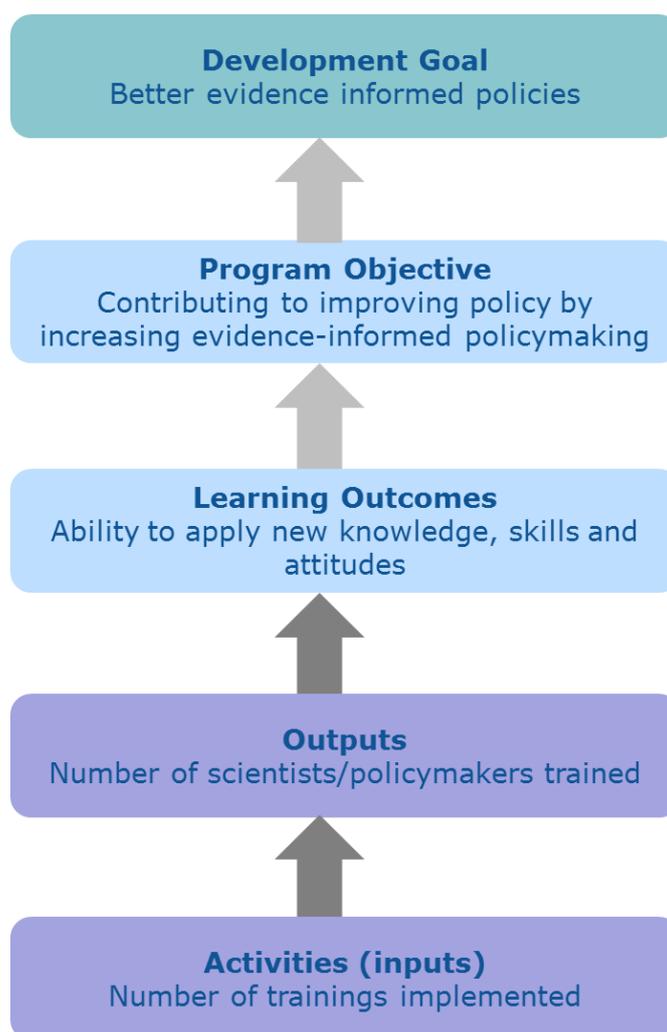
The skills clusters have been developed to be as mutually exclusive as possible, but as shown in the figure below there is high degree of interdependency implying that knowledge, skills and attitudes acquired in one cluster are likely also to be relevant for another one.

Figure 1: Overview of the 8 skills clusters



The presentation of the skills clusters in this document is based on the standard program logic model, where **outcomes** are described as the ability to change behaviour among researchers and policymakers, e.g. being able to apply their new knowledge; skills and attitudes; **Outputs** are the supply-side deliverables, i.e. the number of researchers and policymakers trained; and **Activities** – the number of trainings implemented.

Figure 2: Elements of Standard Program Logic Model



In line with the standard program logic model, **all skills cluster aim to contribute to the same Program Objective**, namely to contribute to improving policy by increasing evidence-informed policymaking, be it through providing more robust evidence, better contextual awareness (cluster 1), better communication and collaboration between researchers and policymakers (cluster 2), more effective management of knowledge (cluster 3) and networks (cluster 4), clear and concise communication of knowledge (cluster 5) in effective messages to policymakers (cluster 6), engagement with the public (cluster 7) or an effective monitoring, evaluation and learning framework (cluster 8). Achieving the **Program Objective** will contribute to the realising the long-term **Development Goal**, i.e. better evidence informed policies, but it is important to have in mind that other contributions from development efforts are required as well to achieve the long-term development goal.

In practice, each training cluster may be needed in a "basic", "intermediate" and "advanced" version to allow for individual researchers and policymakers to tailor their professional development to their specific needs. Consequently, the **learning outcomes** in terms of knowledge, skills and attitudes acquired during a training intervention may be different for researchers and policymakers. Each cluster may be sub-divided with different courses.

Cluster 1: Understanding Policy & Science

Outline

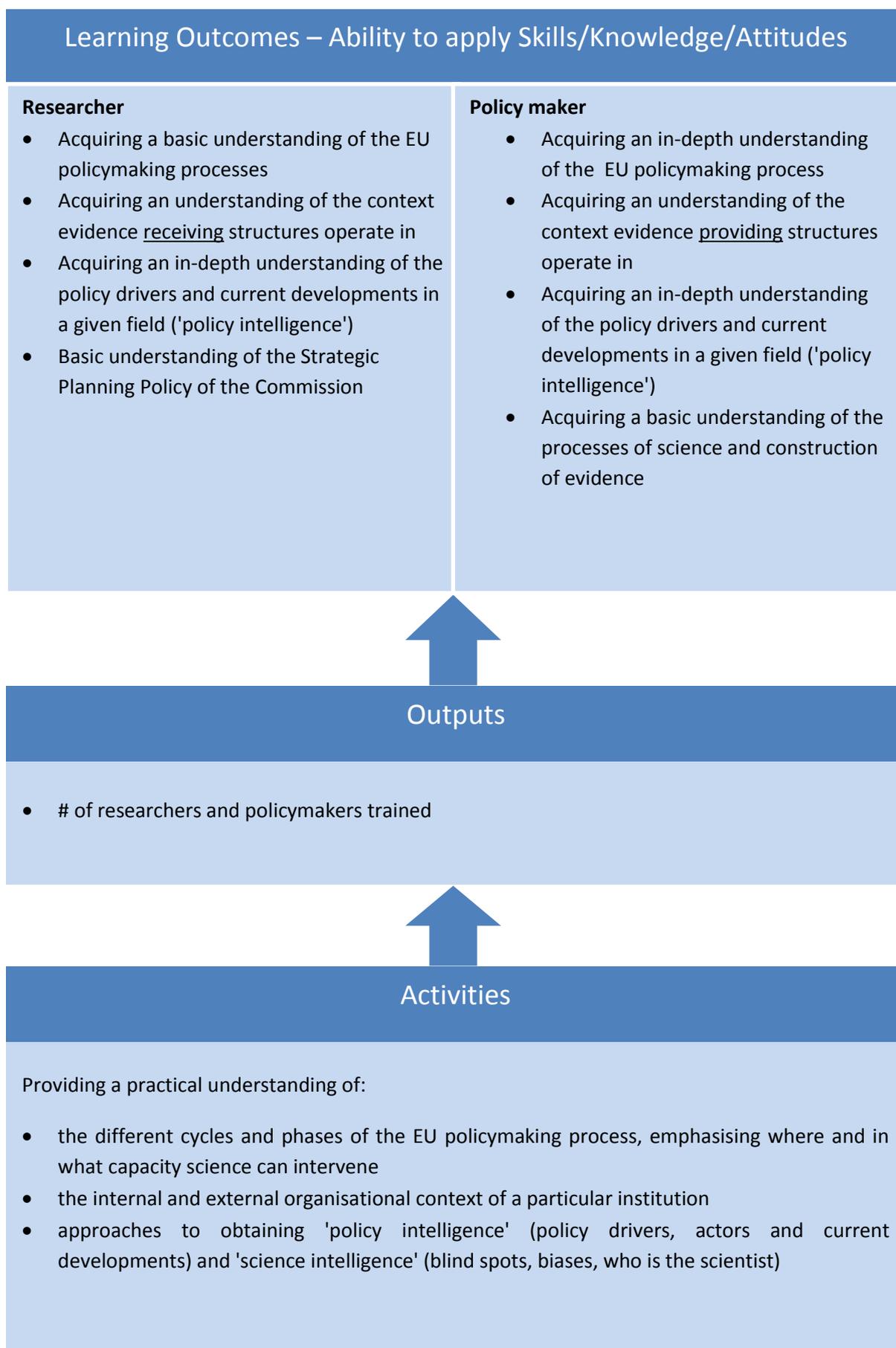
Contextual awareness of the science-policy nexus is crucial to succeed in providing evidence and lessen the risk of valuable knowledge being misdirected. This includes understanding the targeted audience, including policymakers, institutions and individuals who are influential on the issue as well as understanding the motives and the drive for the policymakers the researchers is intending to engage with and vice versa. As such, the communication of scientific evidence is nested in specific circumstances which need to be well understood in order to adapt the skills accordingly and use the organisational structures in the best possible way.

This cluster will raise researchers' awareness of the context the policymaker operate in and likewise increase the policymakers' awareness of the context the researcher operates in, covering:

- **the different cycles and phases of the policymaking processes:** agenda setting, policy formulation, legislative approval, implementation, monitoring and evaluation;
- **organisational context of evidence receiving structures:** external context (outside stakeholders, local operating environment and external factors influencing its selection of objectives and its ability to meet them). Internal context (internal stakeholders, governance approach, contractual relationships with its "customers", capabilities and culture);
- **approaches to obtaining policy intelligence (primarily for researchers):** understanding the policy driver, actors and current development
- **approaches to obtaining science intelligence (primarily for policymakers):** understanding who is the scientist, if there are different disciplinary perspectives on a question, if there are potential blind spots in a particular approach

Both policymakers and researchers will discover their ability to deploy their contextual awareness into their work with evidence-informed policymaking. Researchers will have to adapt their communication of scientific results to the policy cycle. Policy makers will discover that using their in-depth knowledge about the policy process they are able to anticipate what scientific evidence is useful and when.

Cluster 1: Understanding Policy & Science



Cluster 2: Interpersonal skills

Outline

Interpersonal skills – complementing technical skills – relate to a person's emotional intelligence (EQ), which is the cluster of personality traits, social graces, communication, language, personal habits, friendliness, and optimism that characterise our relationship with other people. A person possessing emotional intelligence is able to manage self and relationships. The benefits for scientists and policymakers of becoming emotional aware are managing intrapersonal and interpersonal relationships, better communication and improved group dynamics; all necessary ingredients for generating policy-relevant knowledge.

Good interpersonal skills enable us to work more effectively in communities and teams, which may be either formal, like at work, or informally in social situations. It is often desirable to build strong relationships with others, which can in turn lead to better interaction and understanding of how to develop interpersonal relationships and empathy for others. In our interaction with others we spend 45% of our time listening, making (active) listening a vital interpersonal. Likewise, in our relations with others the voice is only the tip of the iceberg. We actually interact more using non-verbal signals, gestures, facial expressions, body language and even our appearance.

This cluster will cover interpersonal skills related to:

- **emotional intelligence:** Ability to manage self and relationships
- **non-verbal communication skills:** signals, gestures, facial expression, body language, appearance;
- **group dynamics in decision making:** What are the common group dynamics, strategies for maintaining healthy group dynamics;
- **conflict management:** strategies and tools for how to deal with the inevitable conflicts occurring in the evidence-policy interface;
- **experiential methodologies:** collaboration in a proactive way, how may you do things differently when collaborating with others
- **lateral thinking skills:** the ability to think creatively or "outside the box". Lateral thinking involves discarding the obvious, leaving behind traditional modes of thought, and throwing away preconceptions.

Deploying interpersonal skills to interact well with others is often essential to solving problems that inevitably occur both in our private and professional lives. The evidence-policy interface is just one of the areas which can benefit from good interpersonal skills as it often requires understanding and interacting with a variety of audiences.

Cluster 2: Interpersonal skills**Learning Outcomes – Skills/Knowledge/Attitudes****Researcher**

- Enhanced (active) listening skills in professional settings
- Increased awareness of non-verbal communication skills
- Improved conflict management skills
- Increased awareness and understanding of group dynamics in decision-making
- Increased awareness and understanding of emotional intelligence
- increased understanding of experimental methodologies for collaboration
- Improved lateral thinking skills

Policy maker

- Enhanced (active) listening skills in professional settings
- Increased awareness of non-verbal communication skills
- Improved conflict management skills
- Increased awareness and understanding of group dynamics in decision-making
- Increased awareness and understanding of emotional intelligence
- increased understanding of experimental methodologies for collaboration
- Improved lateral thinking skills

Outputs

- # of researchers and policymakers trained

Activities

#of trainings providing a theoretical and practical understanding of:

- How and when to apply listening and active listening methods
- non-verbal communication skills: signals, gestures, facial expression, body language, appearance Conflict management
- Group dynamics in decision-making
- Emotional intelligence capacities to manage self and relationships
- Experimental methodologies for collaboration
- Lateral thinking

Cluster 3: Synthesising Research

Outline

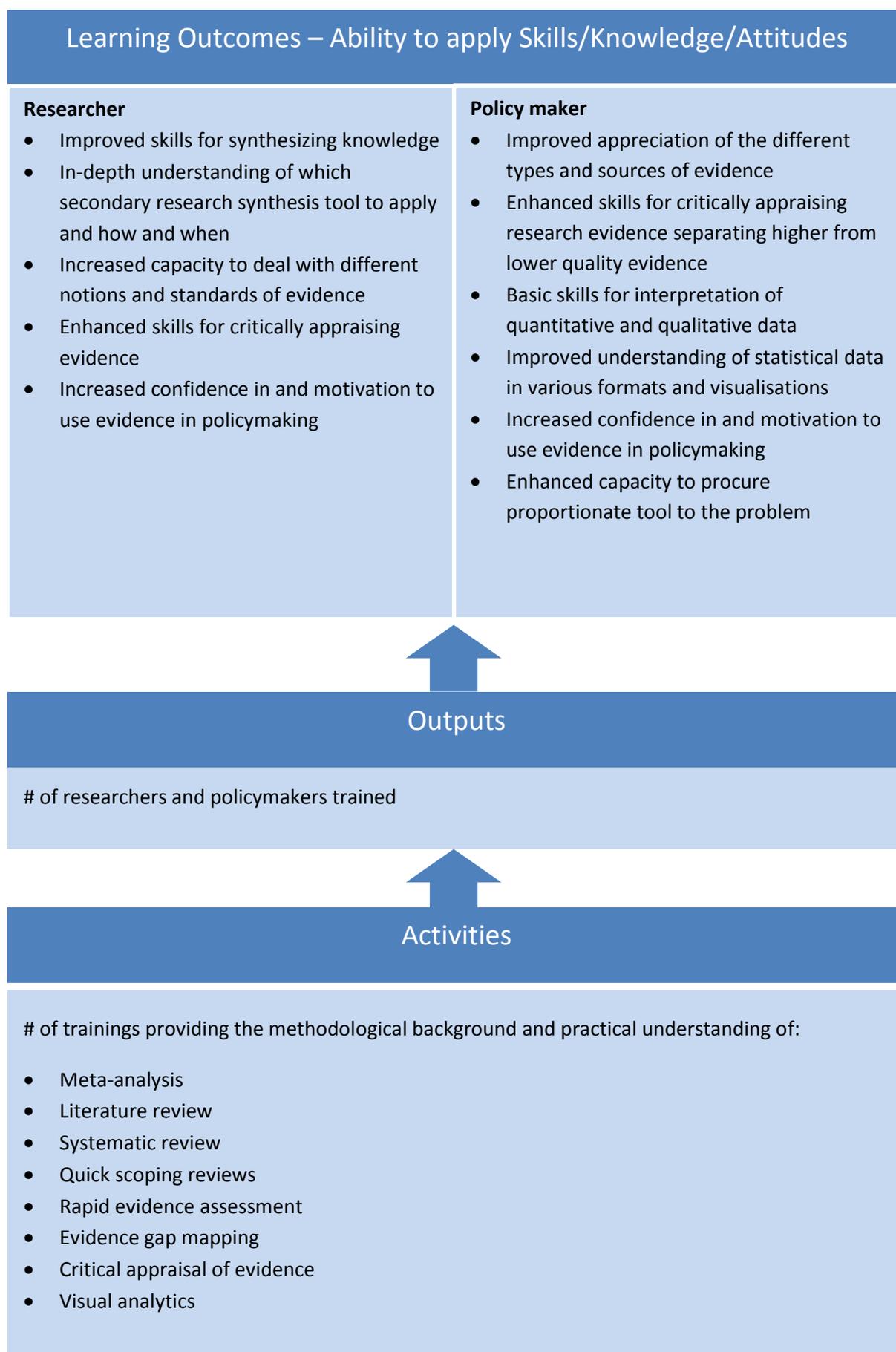
Any area of public policy requires informed decision making about the nature, magnitude and dynamics of a policy problem, and of effective ways of responding to it. Evidence to inform policy and practice should not be taken from a single study or sources alone, but from many studies, multiple sources, multiple countries, and multiple formats and languages, often with different degrees of validity, reliability and quality. The sheer amount and flow of such evidence is beyond that capacity of the human mind without some means of assistance. Research synthesis provides this assistance with a number of methods for identifying, critically appraising, and summarising the *balance of evidence* on a policy problem from a wide range of sources over a long period of time. Thus, research synthesis is an umbrella for a number of detailed methods and tools employed to make better sense of the wealth of knowledge available on a given policy problem. As a result, knowledge may be managed more effectively and policymakers will have access to more robust scientific evidence.

This cluster covers secondary research tools (qualitative and quantitative) relating to synthesising knowledge, critically appraising evidence, and mapping gaps in evidence. The following methods and tools are included:

- **Meta-analysis:** a statistical analysis that combines the results of multiple scientific studies.
- **Literature review:** a text of a scholarly paper, which includes the current knowledge including substantive findings, as well as theoretical and methodological contributions to a particular topic
- **Systematic review:** a type of literature review that collects and critically analyses multiple research studies, using methods that are selected before one or more research questions are formulated, and then finding and analysing studies that relate to and answer those questions in a structured methodology
- **Quick scoping reviews:** A type of evidence review that aims to provide an informed conclusion on the volume and characteristics of an evidence base and a synthesis of what that evidence indicates in relation to a question
- **Rapid evidence assessment (REA):** Like a quick scoping review, but in addition the REA also includes a critical appraisal of that evidence.
- **Evidence gap mapping:** a systematic search of a broad field to identify gaps in knowledge and/or future research needs that presents results in a user-friendly format, often a visual figure or graph, or a searchable database
- **Critical appraisal of evidence:** is the process of carefully and systematically assessing the outcome of scientific research (**evidence**) to judge its trustworthiness, value and relevance in a particular context.
- **Visual analytics:** Visual analytics is "the science of analytical reasoning facilitated by interactive visual interfaces".

For this particular cluster, policymakers will typically participate in the basic or intermediate version of the cluster providing them with an increased awareness and understanding of research synthesis and its related tools. In particular this should help them to identify and procure the proportionate tool. Researchers, on the other hand, will generally participate in the advanced version providing them with a comprehensive theoretical and practical knowledge about how and when to deploy which research synthesis tool to increase the impacts of research evidence in policymaking.

Cluster 3: Synthesising Research



Cluster 4: Managing Collaborative Expert Communities

Outline

The super intelligence that is changing the world is in the **interdisciplinary community of expertise** (Community of Practice). So rather than the great advances in technology aren't to be found in creating machines with superhuman horsepower, they will instead come from helping information to flow smoothly through the ever-bigger **interdisciplinary** communities of knowledge and by making collaboration easier.

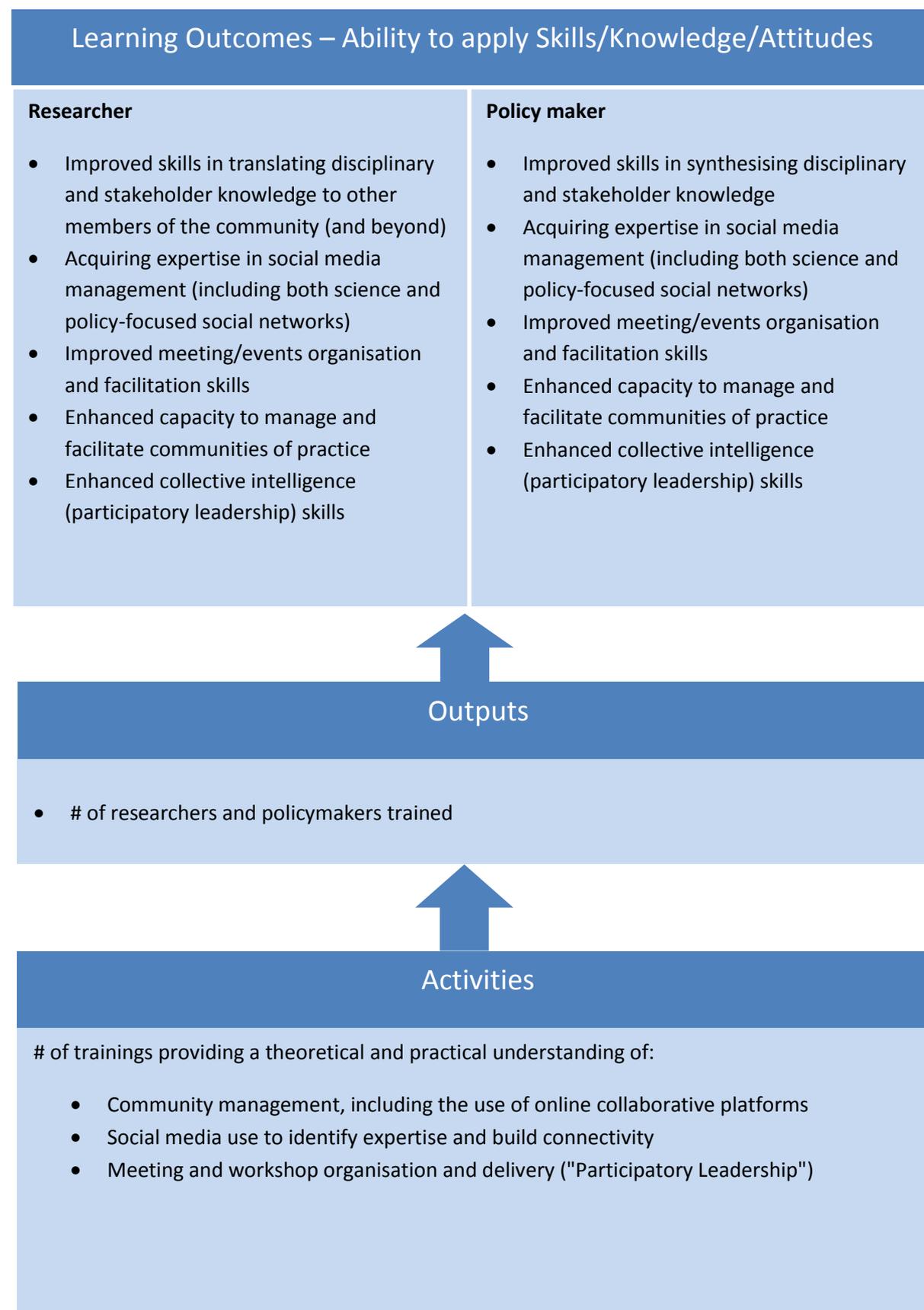
Benefits Communities of Practice for individuals are not only access to new knowledge, but also a greater sense of trust and connection between community members. As they share ideas and experience, community members often develop a shared way of doing things, a set of common practices, and a greater sense of common purpose. In terms of benefits at an organisational level, the Communities of Practice enable expertise to be transferred across and between organisations as well as disciplines, encouraging co-creation of effective, interdisciplinary and inter-policy solutions to a range of policy problems. They also provide an important spark for innovation, through establishing a forum for researchers, policymakers as well as other stakeholders to share and co-create.

Consequently, no good knowledge management system can operate without mapping and connecting strengths and expertise of various individuals and groups in a given policy area. This is a key skill, as properly synthesised, well communicated expertise adapted to the needs and reality of policymaking benefits from collective wisdom of networked and diverse interdisciplinary practitioners. Moreover, knowledge feeds policymaking process more effectively when closer science-policy ties are established and interdisciplinary and inter-policy solutions are the norm.

Networking and facilitation skills span digital and physical interactions and include:

- **Use of social media** (including Twitter as well as science-focused social networks like Academia.edu or ResearchGate) to identify expertise and build connectivity;
- **community management**, including the use of online collaborative platforms;
- **organisation and facilitation** of meetings, events and workshops using "**Participatory Leadership**"

Thus, Interdisciplinary Communities of Practice should span boundaries of both sciences and policies and stimulate interaction around problems/topics, not occupational categories, in order to facilitate the exchange of ideas and better understandings of each other's needs and hence provide a platform for co-creation of research and policy.

Cluster 4: Managing Collaborative Expert Communities

Cluster 5: Communicating Scientific Knowledge

Outline

Evidence-informed policymaking depends, first of all, on the existence and availability of reliable evidence. No less importantly, it requires that researchers communicate with other non-researchers effectively. Communication of scientific knowledge encompasses a wide array of skills helping to pass messages across, both in written and oral form, in digital and physical context.

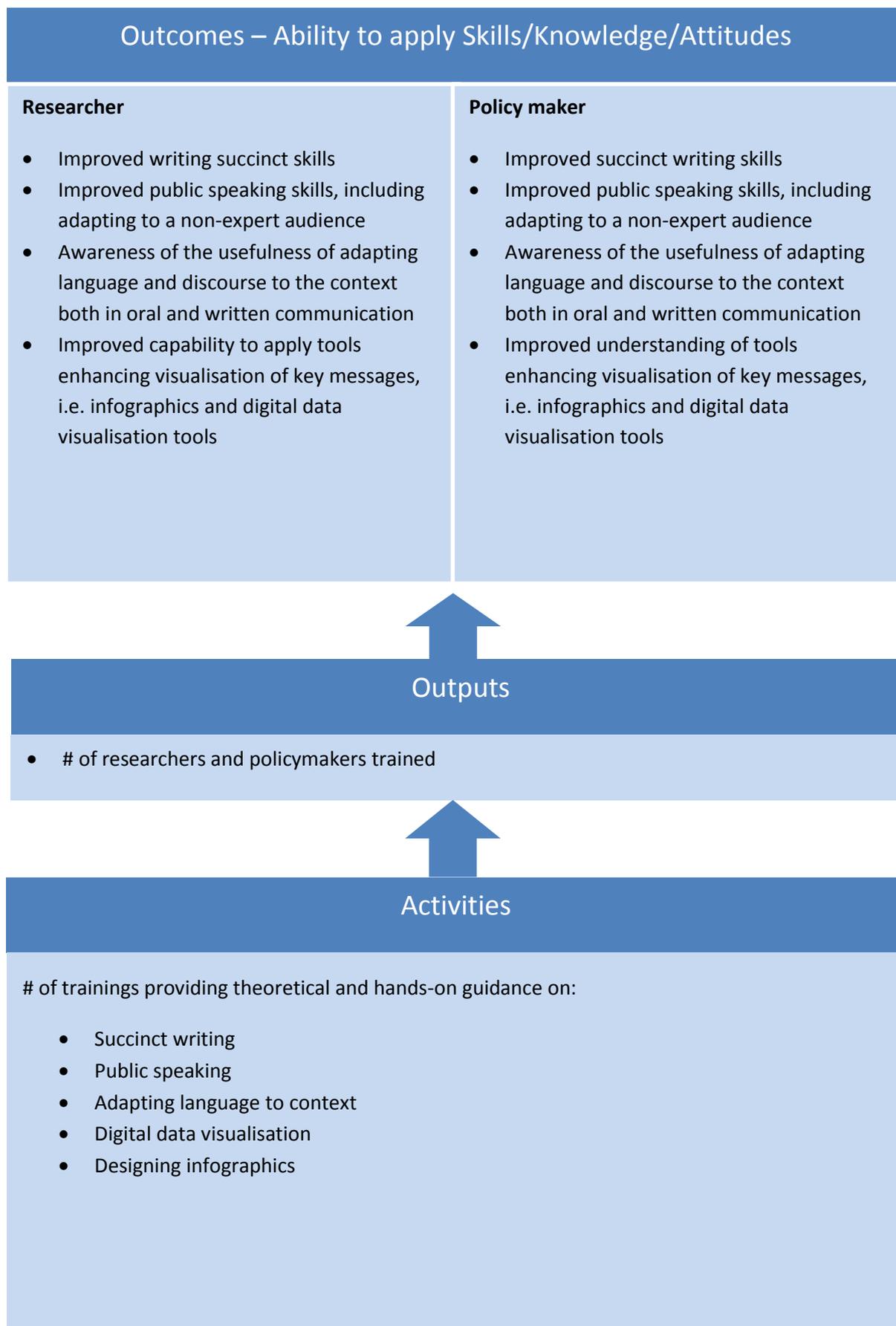
This cluster is focusing on content-related communication skills covering the below communication tools.

- **Succinct writing:** clear, precise expression in a few words aiming at getting your point across quickly and being more easily understood
- **Public speaking, including to a non-expert audience;** techniques for becoming a better public speaker at meetings, workshops as well as informal settings (e.g. corridor, coffee break)
- **Adapting language to context:** how to adapt the way you communicate to different situations by considering the many factors (situation/occasion, identify your objective, know your audience, method of communication, body language, feedback from audience) that influence the effectiveness of your communication.
- **Digital data visualisation:** creation and study of visual presentations of data, such as maps, pie charts and line graphs. These can be used not simply to illustrate finished arguments, but also to help explore data in new ways;
- **Infographic design:** graphic visual representations of information, data or knowledge intended to present information quickly and clearly. How to improve cognition by utilizing graphics to enhance the human visual system's ability to see patterns and trends.

It is important to embrace the uncertainty in science, and hence acknowledge that an important element of science communication is the communication of scientific uncertainty. Unless that uncertainty is communicated effectively – no matter which communication form is used – decision makers may put too much or too little faith in it.

When researchers communicate effectively beyond their peers to broader, non-researcher audiences, including policymakers and politicians, it builds support for science and encourages more informed decision-making at all levels, from government to communities to individuals.

Cluster 5 – Communicating Scientific Knowledge



Cluster 6: Advising Policymakers

Outline

Not all researchers will actively seek to have an impact on policy. Some will consider it sufficient to only communicate their knowledge to a specialist audience. Science policy advisors are defined by ambition to go beyond simply communicating research evidence to engaging with the policymaking process by identifying options helping to understand impact and providing policy advice from a scientific viewpoint.

Co-operation between policymakers and researchers does not always come naturally. A familiar set of obstacles – cultural, linguistic and institutional – can make interaction difficult. What is more, researchers, and policymakers are all subject to biases, mental shortcuts (heuristics), social and cultural influences and the limits of their cognitive bandwidth.

To understand how these behavioural insights are pertinent for policymaking implies an awareness of how researchers' and policy-makers' own biases can account for flawed problem definitions and policies. Thus, to increase the impact of research evidence on policymaking, policy advisors (researchers and policymakers) and advisory structures need a particular sensitivity to how they provide and frame advice and evidence, and this is not always obvious.

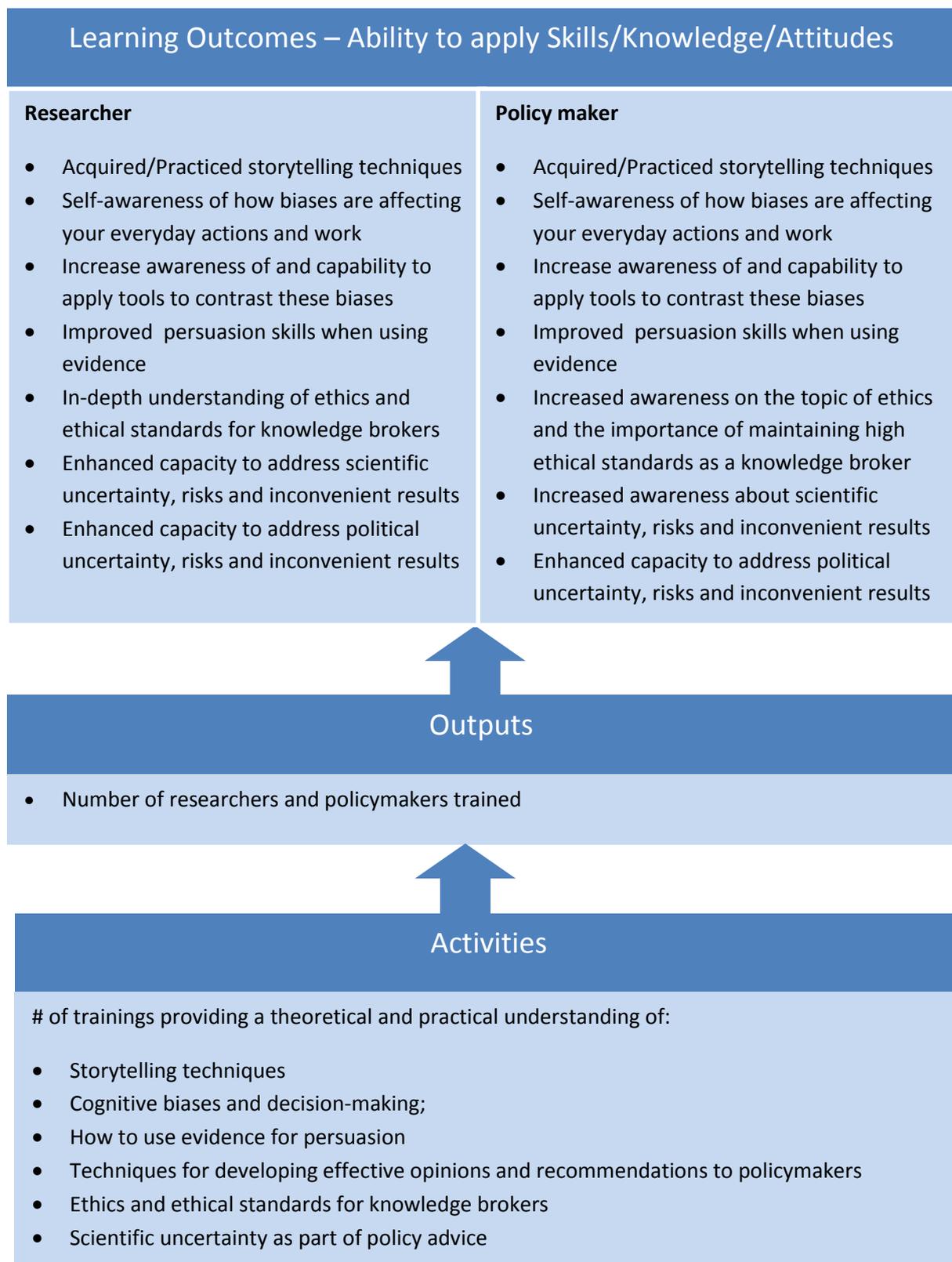
In this context, storytelling is an important tool for distilling complex issues and relating them back to a policymaker's interests, values or experience. Researchers can use stories to issues to improve the impact of their interaction with policymakers.

This cluster will provide an understanding of:

- **Storytelling in theory and practice:** using stories to promote policy change and provide policy advice. How to turn scientific evidence into simple and effective stories that appeal to the biases of policymakers;
- **Cognitive biases and decision-making:** mechanisms to check and correct for cognitive biases and influence as even dedicated, well-meaning researchers, policymakers and politicians can fail to help, or even inadvertently harm, the very people they seek to assist if their choices are subtly and unconsciously influenced by their social environment, the mental models they have of the poor, and the limits of their cognitive bandwidth
- **How to persuade with evidence:** recognising that evidence does not speak for itself, approaches to how to use evidence for persuasion in the science-policy interface are presented and discussed
- **Opinions, recommendations:** methods and techniques for developing opinions and recommendations taking into consideration the target audience and your end-goal.
- **Ethics and ethical standards:** understanding ethics in the science-policy interface and guidance on how to maintain ethical standards as a knowledge broker
- **Scientific uncertainty:** addressing scientific uncertainty requires both simplifying and complicating normal scientific discourse. On the one hand, the uncertainties that it addresses must be reduced to their decision-relevant elements. On the other hand, the uncertainties that researchers fail to mention must be uncovered.

The researchers and policymakers will learn to appreciate that knowledge is constructed to fit the views and interests of those advocating for specific policy pathways. Rather than proceed with the notion that one policy path is "optimal" based on one set of "facts", the cluster will show how participatory processes can be designed to respect that different frames of the problem and different "facts" called upon to support the views. A successful policy may not be viewed as optimal from any one perspective, but policies have an improved chance to be robust (long-lasting) if they accommodate competing views.

Cluster 6: Advising Policymakers



Cluster 7: Engaging with Citizens & Stakeholders

Outline

Since the turn of the century, engagement of the public (individual citizens) and stakeholders (organised structures) in policymaking has been an issue of rapidly increasing societal importance. Citizens and stakeholder engagement comes in many shapes and responds to different objectives, ranging from consultative exercises at local level to cross-European or even global deliberative exercises. Engagement of citizens and stakeholders can be considered as a way of aligning research and policymaking with societal needs and demands.

The engagement may refer to intentional, meaningful interactions that provide opportunities for mutual learning between researchers/policymakers and the public (individuals) and stakeholders. Mutual learning refers not just to the acquisition of knowledge, but also to increased familiarity with a breadth of perspectives, frames, and worldviews. In addition to these institutionalised and invited forms of engagement, citizens have in the recent past also become part of the innovation and increasingly the research effort itself through do it yourself science and other bottom-up approaches.

The objectives of engagement with citizens and stakeholders besides from mutual learning and battling the deficit/expert model of science communication, include civic engagement skills and empowerment, increased awareness of the cultural relevance of science, and recognition of the importance of multiple perspectives and domains of knowledge to scientific endeavours. As such, engagement of citizens and stakeholders is an ethical issues and solidarity as it is through collective enterprise that we will live the lives that we wish to live on the basis of the values and norms that we collectively decided upon.

This cluster will develop the skills of researchers and policymakers in applying different types of engagement activities involving citizens and/or stakeholders:

- **Policy deliberation:** Focus on long-range planning perspectives, continuous public consultation, and institutional self-reflection and course correction in response to public input.
- **Knowledge co-production:** Focus on intentional collaborations in which members of the public engage in the process of research to generate new science-based knowledge.
- **Citizens science:** Engagement of citizens in the process of scientific production with aim of incorporating other types of knowledge in the process
- **Informal:** informal, un-invited, one-on-one interactions in daily life between researchers and publics

Partnerships with public engagement practitioners (e.g. outreach director, event organiser), can minimize the time required for a researcher's/policymaker's engagement as well as make it easier for them to easily connect with various publics. Consequently, the partnership with public engagement practitioners supports and trains researchers for their engagement.

Cluster 7: Engaging with Citizens & Stakeholders**Learning Outcomes – Ability to apply Skills/Knowledge/Attitudes****Researcher:**

- Improved understanding of the benefits and challenges of engaging with the public and stakeholders
- Improved understanding of when – and when not – it is necessary to engage with the public and/or stakeholders
- Enhanced skills for engaging with the public/stakeholders in the form of policy deliberation, knowledge co-production, citizens science and informal one-on-ones related to evidence-informed policymaking

Policy maker:

- Improved understanding of the benefits and challenges of engaging with the public and stakeholders
- Improved understanding of when – and when not – it is necessary to engage with the public and/or stakeholders
- Enhanced skills for engaging with the public/stakeholders in the form of policy deliberation, knowledge co-production, citizens science and informal one-on-ones related to evidence-informed policymaking

Outcomes

- # of researchers and policymakers trained

Activities

of trainings providing a theoretical and practical understanding of:

- Why and when to engage with the public/stakeholders
- Engagement through policy deliberation
- Engagement through knowledge co-production
- Engagement through citizens science
- Engagement through informal one-on-one interactions

Cluster 8: Monitoring & Evaluation (M&E) Framework

Outline

Monitoring and evaluation of the impact of research evidence on policymaking is a specific skill needed to continuously improve the influence of evidence on policymaking. Without an effective M&E framework we would be unable to track progress, make adjustments and discover unplanned effects of knowledge brokering, or evaluate the impact of research evidence on policymaking.

Monitoring refers to the routine monitoring of inputs and outputs related to knowledge brokering activities, whereas **evaluation** refers to the periodic (mid-term and ex-post) assessment and analysis of these activities. Ultimately, monitoring and evaluation is done with a view to understanding the impact and improve the strategies for increasing research evidence's impact on policymaking.

The M&E Framework will primarily be fed with data collected through several separate (online) surveys focusing on:

- Did the participants put any of their learning to use?
- Have the participants been able to educate their new knowledge, skills or attitudes to colleagues?
- Are the participants aware that they have changed their behaviour?

The learnings generated from monitoring and evaluation is reflected upon by the knowledge brokerage institutions and used to continuously improve their influence on policymaking, including improving the collective skillset needed to successfully operate in the science-policy interface.

Cluster 8: Monitoring & Evaluation Framework