Workshops on best practices of interaction between academies and with policymakers

Report on exchanges between academies during the workshops on Best Practices of Interaction between Academies and with Policymakers organised by SAPEA at the Royal Academy of Engineering of Spain in Madrid and at the Technical Sciences Academy of Romania in Bucharest in 2017

SAPEA

Science Advice for Policy by European Academies

This report presents exchanges between academies during the workshops on 'Best Practices of Interaction between Academies and with Policymakers' organised by SAPEA in 2017 at the Royal Academy of Engineering in Madrid, Spain, and the Technical Sciences Academy of Romania in Bucharest. This document aims to summarise the conversations throughout the day and therefore does not necessarily represent the views of SAPEA, the European Academy Networks or their member academies. The information, facts and opinions set out in this report are those of the authors and do not necessarily reflect the opinion of the European Commission. The SAPEA Consortium is not responsible for the use which may be made of the information contained in this report by anyone, including the European Union institutions and bodies or any person acting on their behalf.

About SAPEA: Spanning the disciplines of engineering, humanities, medicine, natural sciences and social sciences, SAPEA (Science Advice for Policy by European Academies) brings together the outstanding knowledge and expertise from over 100 academies, young academies and learned societies in more than 40 countries across Europe. Working closely with the European Commission Group of Chief Scientific Advisors, SAPEA is part of the European Scientific Advice Mechanism (SAM), which provides independent, interdisciplinary and evidence-based scientific advice on policy issues to the European Commission.

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SAPEA
Science Advice for Policy by European Academies

Workshops on best practices of interaction between academies and with policymakers

Workshop participants in Madrid, 21-22 September 2017, (left) and Bucharest, 16-17 October 2017 (right)

SAPEA, January 2019

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Executive summary

In 2017, SAPEA organised two workshops on 'Best Practices of Interaction between Academies and with Policymakers' in Madrid and Bucharest, to address the challenges that different countries and Academies have in common in the area of science advice for policy, and to share experiences and approaches that would be beneficial for future activities. These workshops were based on case studies and presentations by a wide range of Academies with varying organisational structures and different strategies to address those challenges. The workshops happened in 2017, but this report has been compiled in 2018 and published in 2019.

The interdisciplinary workshops brought together 80 participants from 25 countries and 52 national Academies, each with different backgrounds in humanities, medicine, natural sciences and technology. For the first time, representatives of all five Academy Networks that participate in SAPEA presented their networks and the European Commission gave an overview of the diversity of scientific advice at the Commission level.

Experiences from different Academies were presented under the following headings:

- The role of European Academies: challenges and opportunities
- Activities and best practices in Academies
- Fostering and enhancing networking and collaboration among European Academies
- Providing science advice for policy: SAM and SAPEA for Academies in Europe

Information was shared about the major issues encountered in each Academy and proposals were exchanged to overcome the challenges. Among the many topics that were raised, the main conclusions can be summarised as follows:

- Societies need independent scientific advice and Academies play an important role in this regard. A number of Academies are already actively engaging with policymakers and national governments and this role should be strengthened especially regarding the timeliness of advice in a changing political environment
- There is a fast evolution of knowledge and early-career researchers are an important presence to increase the dynamics within Academies. Young academics can play an important role in the science-policy interface and Academies should consider ways to include young Fellows in their membership.
- A number of other challenges are common to all Academies, especially limited financial resources. There are new models for financing, such as the renegotiation of the public funding base. The role of private financing is important but requires strict mechanisms to maintain the scientific independence of the Academies.
- Cooperation and interdisciplinarity are important tools that are needed to solve today's grand challenges. SAPEA focuses in particular on interdisciplinarity.
- The SAPEA consortium provides a framework in which European Academies and

different disciplines can work together on topics of societal relevance at a European level. The workshops showed that there is keen interest to cooperate and work on topics of mutual interest.

The participants of the workshops found it beneficial to compare cross-cutting experiences with representatives from different Academy backgrounds and to have the opportunity to ask practical questions and to gain new insights. The written evaluations and verbal feedback indicated that there would be interest among SAPEA Member Academies in continuing the dialogue.

The idea of organising a follow-up workshop was discussed, to explore synergies and intensify the dialogue on topics of mutual interest, including exchange of information; how to participate in joint working groups; and progress made in dialogues with national governments.

SAPEA Board representative Ole Petersen emphasised:

> **Science for policy will become more important as the availability and amount of information increases. Policymakers should make use of the best available scientific knowledge, and the independence and scientific integrity based on the excellence and transparency of Academies is an important asset in this regard.**

1.
INTRODUCTION

"SAPEA offers a previously untapped wealth of opportunities for many of our Member Academies to elevate their outstanding scientific work on the national level to the European level, and thereby contribute to excellent evidence-based advice to the European institutions."

Günther Stock
SAPEA chair 2017

Introduction

The European Commission's Horizon 2020 SAPEA project (Science Advice for Policy by European Academies), Grant Agreement Number 737432, brings together more than 100 national and regional Academies in 41 countries and from various disciplines across Europe.

SAPEA started in November 2016 and is part of the SAM, the Scientific Advice Mechanism established by the EU Commissioner for Research, Science and Innovation Carlos Moedas and European Commission President Jean-Claude Juncker. SAM responds to scientific requests from the European Commission and, in addition, can suggest topics to the European Commission. The Group of Chief Scientific Advisors (GCSA) asks SAPEA to review the evidence on the topic and produce an Evidence Review Report (ERR) summarising the state of the art on that topic and offering policy options. On the basis of this report, the GCSA produces an "opinion" with policy recommendations.

Through SAPEA, the Academies have thus an opportunity to contribute to independent evidence-based policymaking. The strength of SAPEA resides in the excellence of its Fellows, in the diversity and geographical breadth of its Academy Networks, its robust scientific procedures, and in the individual Member Academies working together.

Two workshops were organised by SAPEA on 21-22 September in Madrid (Spain) and 16-17 October in Bucharest (Romania). The aim of these two workshops was to

- strengthen cooperation among Academies at regional, national and international levels
- foster exchange on issues of common interest
- support individual Academies to provide evidence-based policy advice
- share examples of best practices among Academies
- improve the contribution of Academies to the European Commission's SAM through SAPEA

The two SAPEA workshops were initiated to share experiences among Academies at regional and national levels. At the same time, it was a good opportunity to give a better understanding of the SAM and SAPEA processes to the participants. However, this part of the workshop will not be reported here. Instead, the information can be found on the SAM and SAPEA websites: **ec.europa.eu/reseach/sam** and **www.sapea.info**.

Presidents of the host country Academies welcomed attendees and gave insights into the mechanisms and structures of their Academies. Presentations were also given by a variety of SAPEA partaking Academies. Break-out sessions brought opportunities for open dialogue and a rapporteur reported back from each discussion in plenary.

The full programme, the list of participants, and the list of presentations can be found in the annex. The presentations and photos from the workshop can be downloaded from **www.sapea.info/interactions2017.**

This report summarises the discussions and conclusions of the two workshops. These workshops were based on case studies and presentations by a wide range of Academies with different organisational structures. Excerpts of these presentations are included in this report. The report also includes the results of a survey conducted by SAPEA and

completed by Academies across Europe. The first part of the report will deal with the discussions on best practices of academy interaction and with policymakers and the second part with challenges. A number of the questions raised during these workshops have rarely been raised between the participants before.

SAPEA offers a unique opportunity to channel the voices of the best experts and the Academies in Europe. In challenging times in which falsehoods are portrayed as 'alternative facts', in which political and social movements are polarising, and in which academic freedom is infringed in several countries, rational scientific advice has become more important than ever. At the same time, there is a need for scientists to interact in better ways with society and with policymakers, to create a better understanding of the possibilities and limits of science.

Traditional forms of communication are changing. The internet has become a primary place for interaction and the exchange of information, increasingly about topics of immense relevance. Expert knowledge is increasingly openly challenged. Academies, as institutions that exist to encourage scientific ways of thinking in society, are, among others, affected by these recent anti-science tendencies. People feel overwhelmed by information, and it is increasingly difficult to know which information one can trust. The robust scientific procedures at the Academies (such as peer review and endorsement) have the potential to play an important role in (re)building trust in information and in science.

In light of growing complex technological, social and environmental challenges, there are uncertainties and no simple solutions. Part of good scientific evidence review procedures is to clearly state where scientists agree, disagree and what the 'known unknowns' are. The Academies offer the opportunity to access the best scientists in Europe to review these complex issues. They aim to make their expertise available to the European Commission through SAPEA.

2.

THE ROLE AND STRUCTURE OF EUROPEAN ACADEMIES AND ACADEMY NETWORKS: AN OVERVIEW

2.1 The role of European Academies in the policymaking process

At the workshops, several representatives from different National Academies presented and discussed their perspective on the respective national policymaking processes. These can be considered as a starting point for defining best practice in delivering science-based advice to policymakers.

Europe has a long tradition of Academies and Learned Societies. In previous centuries the role of these meritocratic groups centred on fostering progress through knowledge exchange amongst the best scientists of their fields. However, in the last few decades there has been an increasing emphasis on the Academies' public role as providers of independent advice to policymakers and society and sources of information for the general public.

Academies are able to prepare scientific evidence, policy options and/or recommendations. Academies typically respond to requests for advice that are addressed to them directly by governments, but they can also proactively offer unsolicited advice, and raise issues that are not yet on the political agenda. This occurs mainly at the beginning of decision-making processes. Academies are able to contribute a cross-sectoral view that is independent of political or other interests, and in this way improve the quality of decisions taken by governments. With the exponentially growing number of available scientific studies, and powerful lobby organisations supporting selected interests, this independent cross-sectoral view is an invaluable asset for policymakers.

There are a number of key characteristics that differentiate Academies from other voices in the public debate: one is their position on common wellbeing and a second is their political independence. Academies value their autonomy and usually work in the form of platforms or thematic networks that provide the intellectual basis for the science-based policy advice offered. The work, workshops, drafting of reports and the formulation of policy options and/or recommendations are organised independently. Academies are not lobby organisations and their independence brings prestige and credibility to the advice they offer.

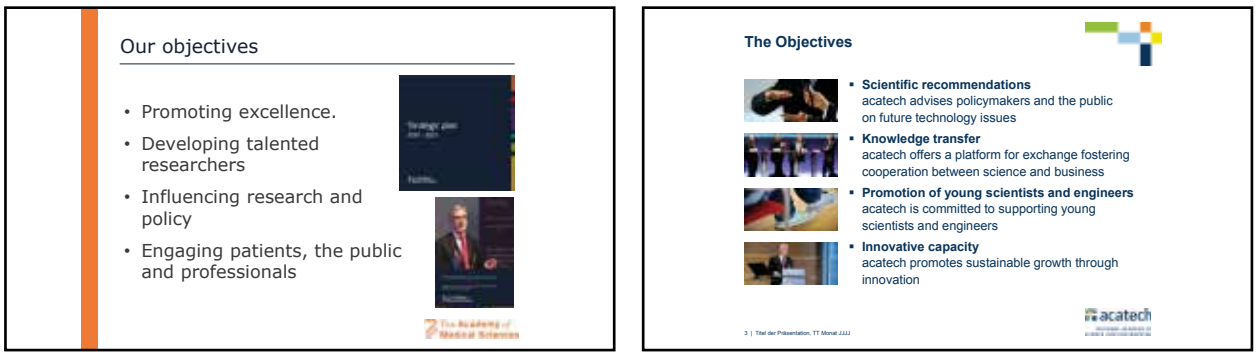

Figure 1: Academies' objectives: examples from the Academy of Medicine (UK) and acatech (Germany)

The main objectives and activities of Academies can fall into one or more categories:

- interdisciplinary dialogue
- studies and expertise of selected topics of high national priority
- provision of policy advice to decision makers
- engagement and dialogue with citizens
- foresight and assessment exercises of technological challenges and support of innovation
- encouragement of young talent through educational activities

Academy Fellows are elected by their peers on the basis of their scientific merit. Therefore, Academies represent the best scientists, scholars and engineers. Most Academies have developed internal guidelines on how to advise policymakers and society, and rigorous scientific methods and quality assurance procedures guarantee that Academies are able to ensure a balance between differing interests. Publications are written by experts that are identified and nominated by the Academies. These papers are peer-reviewed and endorsed by their Boards or General Assemblies. Expert groups work either in the form of a permanent or an ad hoc project-based working group, which provides the intellectual basis for the reports, publications and science-based policy advice.

Due to their composition and SAPEA's quality-assurance procedures, the working groups can provide a representative and non-biased overview of the state-of-the art of scientific knowledge on a topic and provide timely evidence-based advice to policymakers.

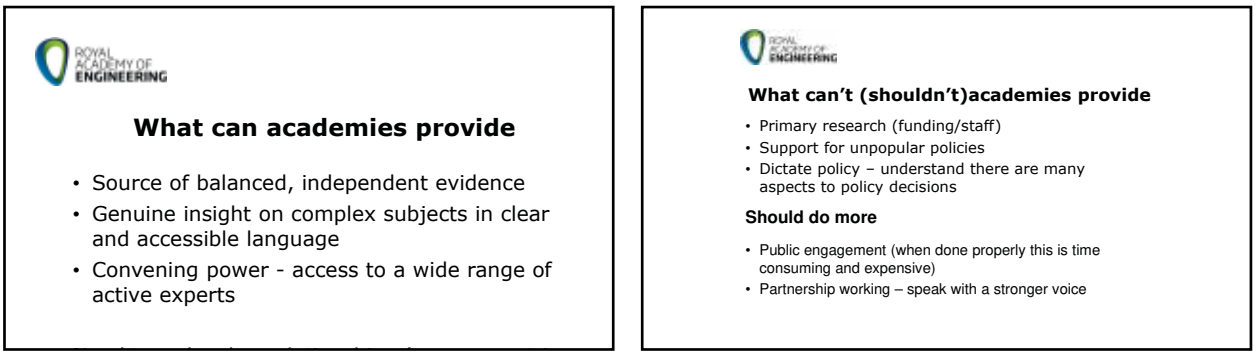

Figure 2: What Academies can and cannot provide, examples presented by the Royal Academy of Engineering (UK)

2.2 The European Academy Networks

From the point of view of the European Academy Networks, the purpose of the workshops was to introduce their activities, organisational structures, and working procedures to the participating academies.

The SAPEA Consortium brings together five European Academy Networks. Individual networks are specialised in certain scientific areas, and the Consortium combines these areas of expertise and ensures the inclusion of all scientific disciplines (social, human, natural, engineering and medical sciences). The Consortium's Networks are the following:

- **Academia Europaea** is a European-wide Academy with individual membership from Council of Europe states and other nations across the world. Members are assigned to one of twenty-two academic sections, grouped into one of four classes: Humanities and Arts, Social and Related Sciences, Exact Sciences, and Life Sciences.
- **ALLEA**, the European Federation of Academies of Sciences and Humanities, brings together almost 60 Academies in more than 40 countries members of the Council of Europe, encompassing the full range of scientific disciplines from the natural sciences, life sciences, social sciences, through to arts and humanities.
- **EASAC**, the European Academies' Science Advisory Council, is the network of the 25 National Science Academies of the EU Member States and of Norway and Switzerland. It provides science-based advice to EU policymakers, mainly in the areas of Environment, Energy and Biosciences.
- **Euro-CASE**, the European Council of Academies of Applied Sciences, Technologies and Engineering from 23 European countries, with a special focus on innovation, energy and bio-economy policy and with access to additional expertise from the business sector.
- **FEAM**, the Federation of European Academies of Medicine, brings together 18 national Academies of Medicine and medical sections of national Academies of Sciences.

The Consortium is thus in a strong position to contribute significantly to the Scientific Advice Mechanism, both in providing science-based perspectives and policy options and in distributing evidence-based advice. All five Academy Networks draw on the expertise of their Member Academies at regional and national level.

The main expertise covered by each partner is displayed in the following table.

Partner	Expertise/field
Academia Europaea	Natural Science, Life Sciences, Social and Related Sciences, Humanities
ALLEA ALL European Academies	Natural Sciences, Life Sciences, Social Sciences, Arts and Humanities
European Academies easac Science Advisory Council	Biosciences (Public Health and Agricultural/Plant Sciences), Energy and Environment
Euro-CASE	Engineering, Applied Sciences and Technology with platforms for Innovation, Energy, Engineering Education, and Bio-economy
FEAM Federation of European Academies of Medicine	Biomedical Sciences

The SAPEA Consortium can also call upon expertise available in the Young Academies, in particular the Young Academy of Europe and the Global Young Academy, whose membership covers all disciplines and emerging disciplines. The Young Academy of Europe is affiliated to Academia Europaea.

The five Academy Networks are also members, observers or close partners of globally operating Academy organisations, such as the Inter-Academy Partnership (IAP), consisting of the three global networks - IAP for Science, IAP for Health and IAP for Research and the International Council of Academies of Engineering (CAETS). Some Networks run joint projects with Academy associations on other continents, such as ALLEA and NASAC (the Network of African Academies), in the context of the biennial AEMASE conferences (African European Mediterranean Academies for Science Education). A number of Fellows of Academia Europaea, as well as of many individual European Academies, are based in European countries where no Member Academies with a link to SAPEA exist (e.g. Luxembourg or Cyprus) or in countries outside Europe (e.g. BRIC countries (Brazil, Russia, India and China), US, and Australia).

3.
ACTIVITIES AND CHALLENGES FOR ACADEMIES

3.1 Introduction: An analysis of an internal survey

In advance of the workshops, an online survey was distributed to Academies to collect information and to help set the scene for the workshop discussions (see Annex D for a complete list of questions). Academies were asked to provide feedback on the structures, activities and challenges they experience. In total, 45 Academies answered the survey (two from medical sciences, ten from science, eighteen from technology, two from humanities, and eighteen covering multiple fields).

The results revealed that the activities of Academies mainly revolve around:

- policy advice for governments
- the organisation of conferences
- networking of Fellows

Some Academies have activities that go beyond the science-policy interface and perform large tasks such as running research institutes (in fields of innovative basic research, arts and humanities and/or the social and natural sciences). Smaller Academies with fewer resources tend to focus on one or two activities. In the graph below the single main activities of Academies are shown. It is worth noting that the majority (14 answers) responded that they perform more than just one task including policy advice. On the spectrum of Academies, some are well positioned to provide professional policy advice for government. For others, the main activities are networking among fellows and organisation of conferences.

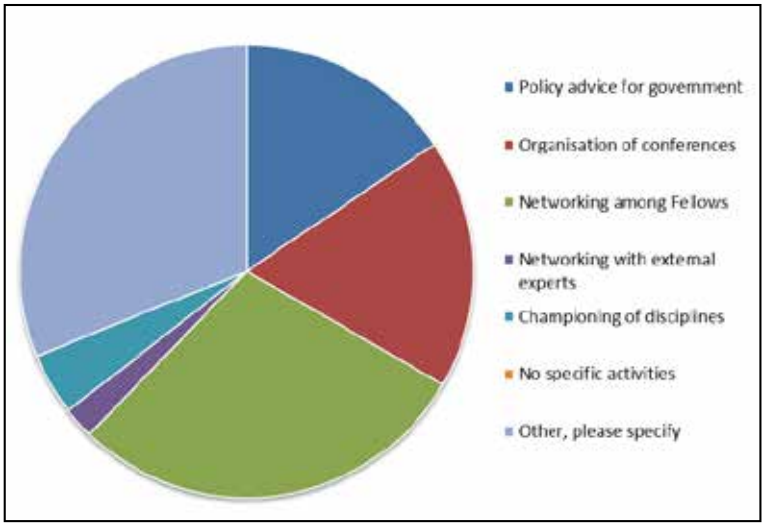

Figure 3: Replies to 'What are the main activities of your Academy?'

The survey results informed that in performing these activities, the Academies face several constraints as shown in the following figure. The single main challenge, as highlighted by more than half of respondents, concerns the shortage of funding for the Academies. This challenge was followed by structural or internal difficulties (mentioned under the category 'other please specify').

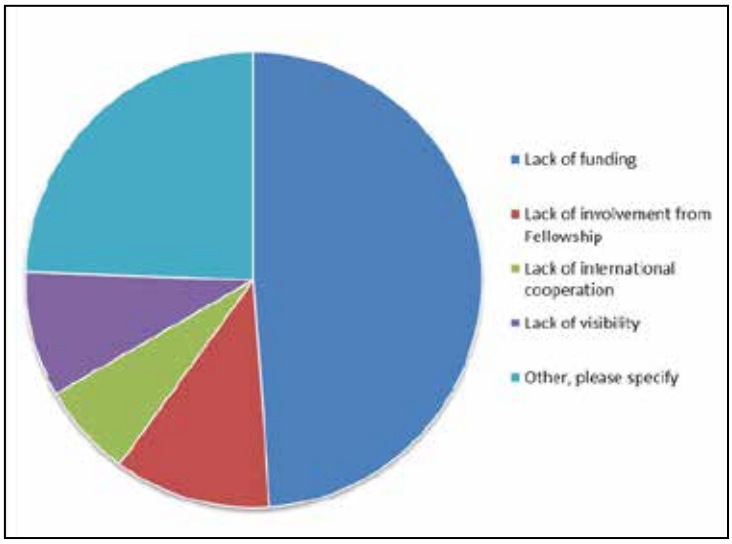

Figure 4: Replies to 'What are the main challenges for your Academy?'

The survey and the workshops revealed that there are several expected benefits among the Academies regarding their contribution to SAPEA (see the following graph, multiple answers possible). It was an interesting finding that there are three clear expected benefits:

- better collaboration with other Academies
- increased visibility at an international level for Academies
- development of skills to drive scientific advice for policy within Academies

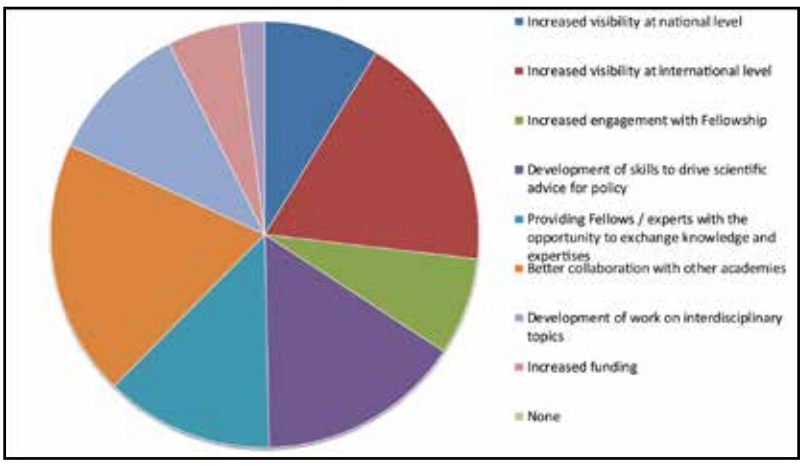

Figure 5: Replies to the question 'In your opinion, what are the main benefits of contributing to SAPEA?' (multiple answers possible)

3.2 Specific items discussed during the break-out sessions

During the workshops, case studies were presented from selected Academies, to allow a deeper understanding of their selected activities and to showcase best practices. Participants also discussed activities, best practices and challenges in small groups during break-out sessions. The discussions focused on challenges such as topic selection, impact and stakeholder engagement, strategies used to promote activities, the role of media for Academies, quality assurance and peer-review. In the break-out sessions, specific items were raised and are summarized here.

3.2.1 Topic selection

The process of topic selection varies among different Academies. In some Academies, the suggestion for a topic comes from individual Fellows, in a 'bottom-up' fashion. While Fellows can champion a topic in this way, ideally a topic is also of interest and concern to the wider society and can instigate a debate including both citizens and government. Topics can also be suggested by governments, i.e., in a 'top-down' manner.

In some Academies there are horizon-scanning activities every six months, or at quarterly meetings of all Fellows, where 2-3 topics are selected. Final topic selection is then approved by a policy committee and ultimately by the Academy Board. An important point acknowledged by the Academies is that the timeliness of advice delivery is important. This requires good contacts with policy makers to agree on timelines, thus matching the supply and demand of scientific advice.

For certain topics arising as priorities for policy makers, there is a risk of insufficient scientific expertise within a given Academy, illustrating the importance of including external scientists in the work of the Academies to access cutting-edge science.

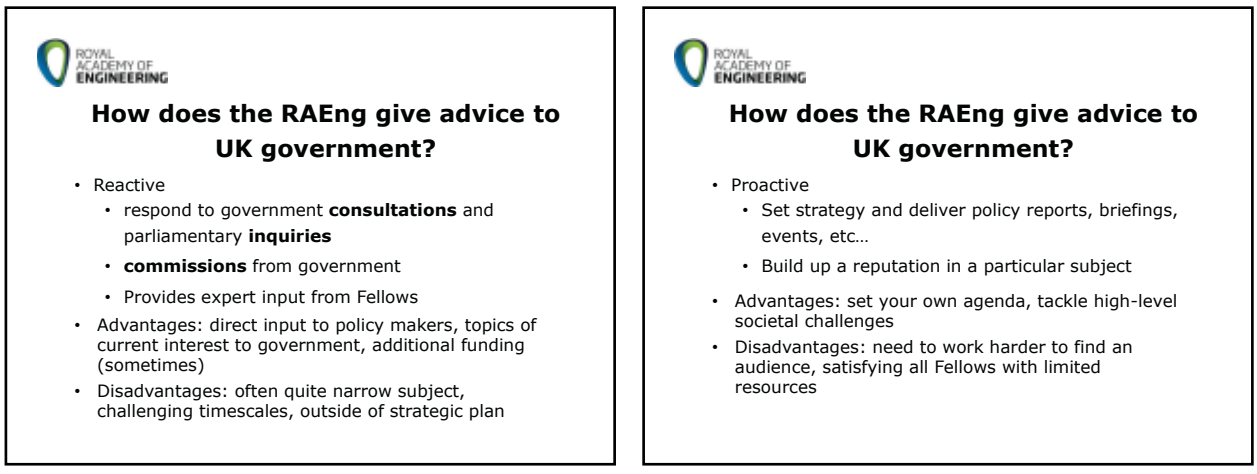

Figure 6: 'Top-down' (reactive) and 'bottom-up' (proactive) models in Royal Academy of Engineering, UK

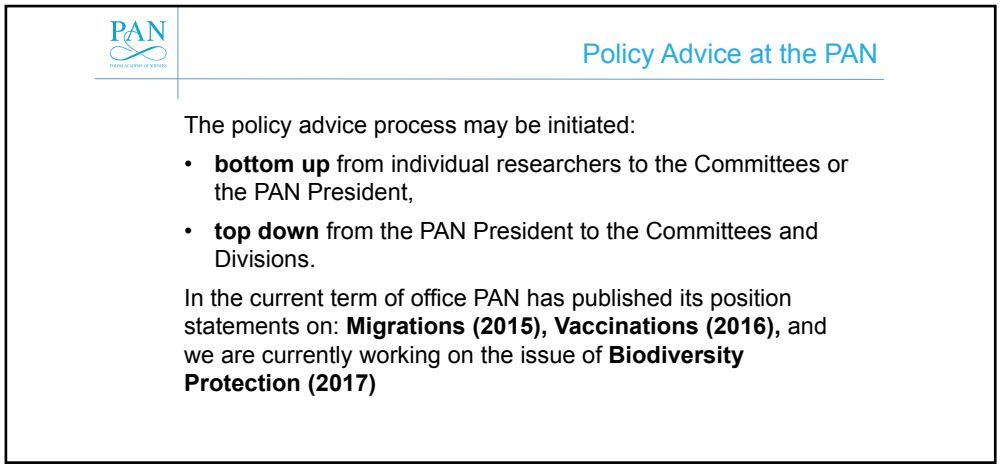

Figure 7: The policy advice topic-generation process in Polska Akademia Nauk (Poland)

3.2.2 Discussion on areas of interest by Academies

Generation of new working topics continues to be of great interest for the Academies. During the workshop, potential future topics that the Academies would be interested in expanding were discussed. There was a general consensus that having a European youth perspective for the future is very important. The following list provides an overview of possible future areas on which the Academies will work either independently, or that could be addressed within the context of SAPEA. Several bilateral contacts were established, and it is possible that two or more national Academies continue their efforts around individual topics jointly:

- Education: education about advances in science and technologies, learning analytics in higher education.
- Medicine: youth in an ageing society, genetics in personalised medicine, importance of evidence-based medicine, migration and vaccination.
- Energy/Climate/Environment: business models and the role of consumers in renewable energy markets, biodiversity protection, water resources in climate change, fast decarbonisation in Europe.
- Ethics: responsible research and innovation, impact and ethics of AI (but already taken on by the European Group on Ethics).
- Mobility.
- Systems engineering.
- Cybersecurity/Counterterrorism.
- Robotics/Future of work/Artificial Intelligence: in particular the socio-technical aspects and links with the International Labour Organisation.

3.2.3 Stakeholder engagement and dissemination

In order to generate impact, robust and regular connections with stakeholders and policy makers are required. In addition, well-organised outreach activities that attract wide societal interest can also generate large impacts.

It was recognised by the workshop participants that more time should be devoted to organising events and targeting the right people for dissemination. Stakeholder audiences will be different for every topic and it is important to engage with people from different backgrounds and disciplines. Within political circles, it is vital to approach the relevant politicians and administrators.

It is also important to inform citizens about scientific findings and ways of thinking, and to communicate them in an effective manner. Finally, for stronger impact, reports should be succinct and modern forms of communications should be used in dissemination activities to make the content accessible to a wider audience.

Activities that could be organised to better engage with the public include roundtables with citizens, policymakers and scientists, joint symposia with the general public, regular sessions open to the public at conferences and/or broadcast online (via podcasts, webinars), or open stakeholder conferences for each report.

Journalists should be contacted pro-actively and communication about an activity, including using social media platforms, should start early on. The controversy surrounding social media platforms was discussed as a challenge. Academies should continue to work on being more outward looking and open to society. A good example of scientists' successful collaboration with the media is the Science Media Centre (UK) **www.sciencemediacentre.org**.

3.2.4 Quality assurance and peer-review

Each Academy has its own procedures to ensure the quality of their reports. During these two workshops, it was recognised that transparency is of absolute importance in this regard. Where there are several strongly diverging scientific positions, dealing with this in an open and transparent manner is the best way, and can reduce the risk that policymakers hesitate to take up advice.

Most Academies have procedures in place to screen potential conflicts of interest of working group members and reviewers. Some Academies reported that they consult with interest groups like companies and trade unions and have procedures in place to filter out bias and conflicts of interest into their work. Diverging practices were mentioned regarding the inclusion of these interest groups into the process of topic selection, fact-findings and reporting. There was a consensus among the workshop participants that transparency regarding the background of the members of the working groups is matter of good practice. Some recommended that the declarations of interest and CVs of working group members be published for more transparency.

Academy reports are subject to internal or external peer review by international reviewers. There was general consensus by attendees that peer-review is an effective mechanism to filter out poor science and biased interests and to guarantee that the report truly reflects the state-of-the art. In some Academies the report goes through a policy committee and also requires approval by the board or the general assembly.

3.2.5 The role of Academies in the 21st Century

Academies are currently faced with new challenges and opportunities and face the dilemma of whether to keep old structures and working models, or to evolve and adapt to current changes in society.

3.2.6 Fellow engagement

The 21st century has seen the evolution of Academies from a primarily networking function to that of provision of scientific advice. In this context, some Academies are faced with the need to increase the engagement of their Fellows. There was some feedback during the workshop that because much of their work is voluntary, some Fellows may lose enthusiasm. It was proposed that the best way to retain their interest is to showcase impact of the Academies' activities and that the topics are pertinent for society.

At the same time, many Fellows may not have experience in the challenging interface between government, politicians and policy makers. Therefore, exchanging experiences between Academies regarding the dialogue between science and policy should be a main priority.

Some participants voiced their concern that these increased activities can only be handled with the support of qualified staff. At the same time, they mentioned that the lack of financial resources hinders the ability to hire qualified staff and to engage in more activities (see below).

In order to be at the forefront of science the inclusion of young fellows in the processes is essential. Another issue that was raised by attendees is how to involve younger Academies in the selection procedures to become a Fellow. To address this, several solutions were put forward such as to establish national young Academies and provide mentorship schemes or to have young associated members.

3.2.7 Funding and resources

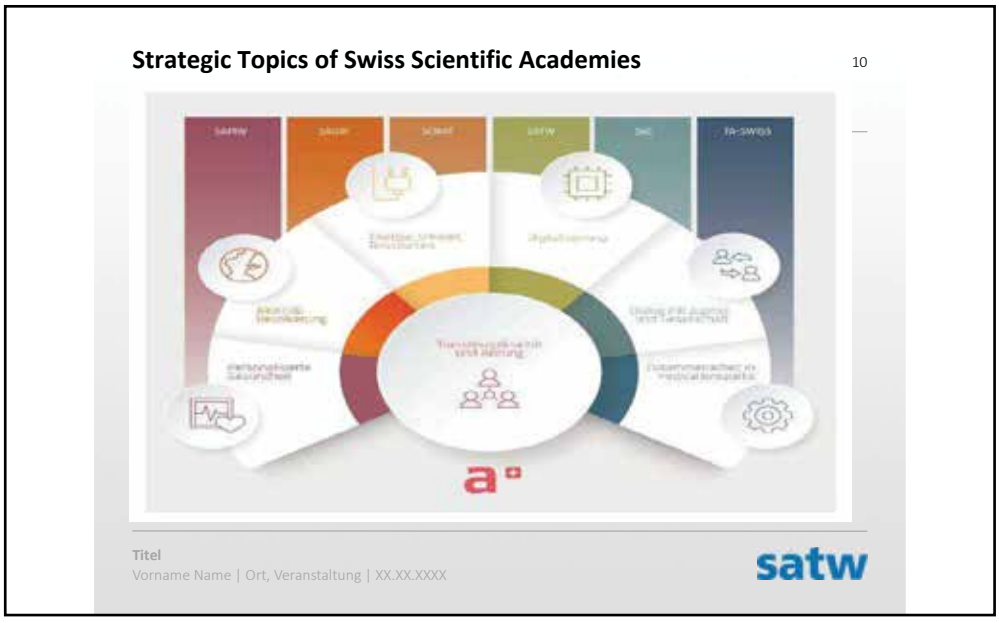

Figure 8: Topics which require cross-academy national collaboration for Swiss Academies

Funding for Academies usually comes from Ministries. Long established Academies are financed institutionally by the respective governments and additionally on a project basis. In times of austerity this funding has been often reduced.

Several examples were mentioned where Academies successfully demonstrating their value for society through pertinent activities and useful advice for policymakers. As a result, it was then possible to increase the basic public funding for academic activities and thereafter the potential of Academies to be more active.

One opportunity (for more technology-focused Academies) is to increase private funding, i.e. donations and sponsorship from industry. The engineering and technological Academies are by their nature more interactive with industry and in these cases, funding

can come partially from industry donations. However, strict measures need to be taken to guarantee the independence of the Academies. The Academy should decide on their own how to use donations without the influence of donors. Examples of such schemes were presented during the workshop.

3.2.8 National cooperation among Academies

The challenge was mentioned that, for the sake of improving scientific policy advice, sometimes synergies on the national level within each country and between different Academies could be enhanced. At the workshop, the Swiss case was presented, whereby the four Swiss Academies have been cooperating in a joint organisation, the Swiss Academies of Arts and Sciences. This was set up as the Swiss government wanted to coordinate activities and receive a consolidated input from its Academies. The joint operation of Swiss Academies is overseen by a Steering Board composed of the five Presidents and five Directors. They work together and cooperate as a joint Academy, by sharing resources and providing interdisciplinary scientific input across all disciplines to address topics of national strategic interest, as shown below.

As exemplified by the case study of SATW, there are several advantages to being part of an interdisciplinary cooperation network:

- exchanging different points of view
- exchanging written documents
- producing common products, reports, journals
- sounding board for own ideas
- exchanging experts for peer-review, working groups, and evaluation

Other countries have recently started discussions to develop a similar strategic direction.

4.
SCIENCE FOR POLICY: SAPEA WITHIN THE SAM

4.1 General context of scientific advice at the Commission

At the workshops Johannes Klumpers, Head of the SAM Unit, gave a presentation on the general context of scientific advice at the European Commission.

Figure 9 illustrates the multiple sources of advice that are available to the Commission. In this complex European landscape, the Scientific Advice Mechanism is unique as it interacts with the Commissioners directly. It provides independent advice to the Commission, i.e. by scientists and researchers not employed by the European Commission. The independent advice is based on Scientific Opinions produced by the Group of Chief Scientific Advisors, informed by evidence review reports carried out by the SAPEA consortium.

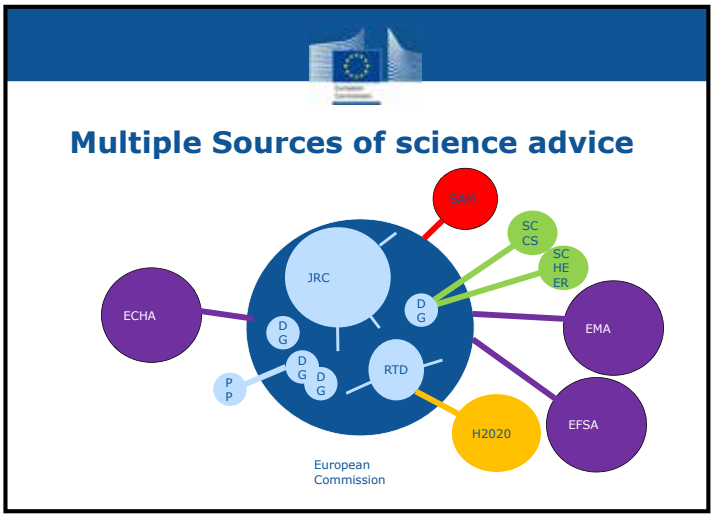

Figure 9: Sources of science advice for the European Commission, authored by Johannes Klumpers, Head of Scientific Advice Mechanism Unit, DG Research and Innovation, European Commission

- SAM: Scientific Advice Mechanism
- SCCS: Scientific Committee on Consumer Safety
- SCHEER: Scientific Committee on Health, Environmental and Emerging Risks
- EMA: European Medicines Agency
- EFSA: European Food Safety Authority
- ECHA: European Chemicals Agency
- H2020: Horizon 2020
- Agencies such as JRC: Joint Research Centre and RTD: Directorate-General for Research and Innovation, also providing scientific advice to the European Commission
- European Commission

The positioning of the light blue circles indicates that this is science advice coming from within the European Commission (with the exception PP = Public Procurement). The coloured lines (red, green, yellow and violet) indicate which institution receives the advice: the DGs (Directorates-General) or the European Commission.

4.2 Academies' contribution to SAPEA

Academies can contribute to SAPEA in various ways. The most important way is to help identify experts for the working groups, to suggest reviewers for SAPEA publications and to help organise meetings and public outreach events. During the workshops there were also some opportunities identified that could be developed further:

- **Generation of topics:** there could be a better mechanism to feed in bottom-up topics (that are also discussed at national levels).
- **Information exchange to and from SAPEA:** Academies voiced an interest in being better informed about what is happening within SAPEA.
- **Outreach activities for SAPEA reports:** Academies play a vital role in mobilising the general public and local scientific community in the dissemination of SAPEA reports.

Finally, it is vital that in the very beginning of each project, policy makers and Academy Fellows understand and agree on the expected timelines, as well as a projected outcome of the advice process, thereby managing expectations.

5.
INTERNATIONAL COOPERATION AMONG ACADEMIES BEYOND THE BORDERS OF EUROPE

5.1 Benefits of international cooperation

Academies often collaborate and establish cooperation agreements with other Academies on the international level that are in the same field and discipline. This is facilitated also by the establishment of the European Academy Networks but also by international Academy Networks, such as the IAP (Inter-Academy Partnership) or CAETS (International Council of Academies of Engineering and Technological Sciences).

Figure 10: International cooperation with other Academy Networks and international organisations, Global Young Academy

One of the advantages of international cooperation among Academies is the coordination of activities on shared topics of interest and the opportunity to generate a consolidated output.

International cooperation is a vital tool not only in science but also for Academies wanting to provide scientific advice on cross-border challenges. By pulling together the best scientists from within and across different countries and disciplines, international cooperation allows complex scientific questions to be answered and global challenges to be addressed.

Another advantage highlighted during the discussions was the capacity-building activities which cooperation and collaboration can support. Smaller Academies can learn new working practices, and gain access to new and useful information, facilities, knowledge and expertise from more established Academies.

International cooperation also takes place on a bilateral scale. An example of such a joint activity among European and non-European Academies is the joint report from NATF (The National Academy of Technologies of France) with the Chinese Academies on Nuclear Energy. The expected benefits at international level are increased visibility and impact, and the ability to address larger transdisciplinary topics that motivate Academies to speak with one voice.

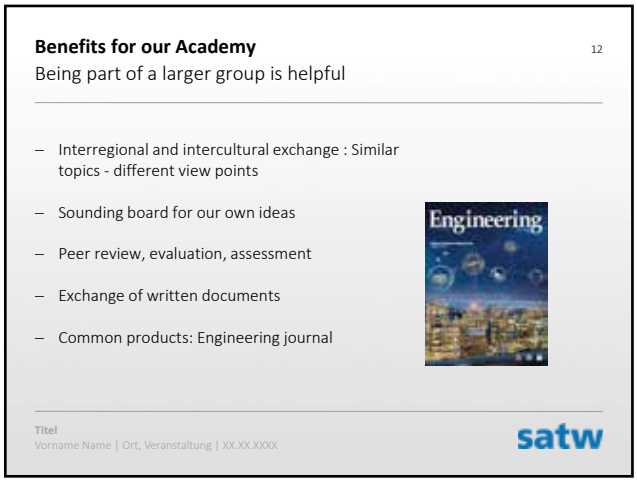

Figure 11: Benefits of international cooperation according to SATW, Switzerland

5.2 Challenges and solutions in international cooperation

Despite the various benefits linked to international cooperation outlined above, many challenges and barriers are still present. Those highlighted during the discussions are as follows:

- Different organisations and different ways of working: it requires a concerted effort to align different agendas, and different organisational structures with different bureaucratic and management styles.
- Differences in culture: language barriers and different mentalities can result in communication problems. Many reports are only available in the local language and are not translated for an international audience.
- Cooperation resources: it is difficult finding extra resources to devote to cooperation activities.
- Leadership, coordination and staff resources: there is sometimes an issue about who is leading in a joint project or activity, and challenges around coordinating people across different countries with no direct line management. Staff and resources dedicated to these activities are usually limited.

To overcome such challenges, some simple solutions were suggested:

- Search for new funding sources to translate reports if an international target audience exists.
- Efficiency of processes is crucial.
- Coordination has to work with little overhead cost.
- Easy allocation of staff efforts across different organisations is necessary.
- Flexibility helps: different roles and ambitions are acceptable.

(International) Cooperation in large Projects is challenging 14

Typical obstacles to overcome

- Cultural differences: Different priorities and different mentalities
- Language problem (common understanding)
- Differences in education and age
- Leadership (who can lead, who is respected, who wants to set the priorities)
- Manpower (staff is usually limited, but background teams are essential)

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Figure 12: Challenges of international cooperation according to SATW, Switzerland

How to have some Impact ? 13

Bundling of forces is essential but not sufficient

- Competition for the eyes and ears of decision makers.
- Giving advice, solving real problems has more impact than just publishing high level reports (position papers).
  - General reports do not fit the local needs.
  - High level papers tend to contain too few new and relevant aspects.
- Project Management is crucial:
  - efficiency, lean processes
  - Time to market

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Figure 13: Impact of international cooperation according to SATW, Switzerland

6.
CONCLUSIONS & NEXT STEPS

The survey of European Academies, talks and discussions, presentation of case studies, and break-out sessions provided an overview of the major activities, issues and challenges faced by Academies across Europe. The fish-bowl activities, informal discussions, Q&A sessions enabled workshop attendees to deepen their understanding, to exchange experiences and offer solutions.

This chapter summarises the highlights from the general discussions and conclusions that were broadly supported by the workshops. It also provides a summary of participants' feedback and recommendations for future developments of the interactions among the Academies.

6.1 Highlights and conclusions

Major points raised during the talks and discussions:

- This event was the first large meeting of different types of Academies in Europe.
- The importance of Academies as independent providers of science policy advice, and experiences was recognised.
- The lack of sufficient funding is the major issue for most Academies (also regarding international activities and cooperation).
- The participation of further stakeholders like industry, NGOs, trade unions, etc. should be sought, but robust procedures are needed to guarantee the independence of advice.
- Stakeholder engagement, dissemination and communication should be improved.

Among the many and various topics and discussions, the main conclusions reached at the workshops can be summarised as follows:

Several challenges are faced by all Academies, such as public engagement, limited financial resources, and the difficulty to synchronise advice with policy cycles.

In times of 'alternative facts' and manipulated data, Academies are important organisations oriented towards public welfare, based on political independence and scientific integrity, that should be recognised as such by both governments and citizens.

Academies need to adapt to changing dynamics between policy makers, scientists, citizens and media. It is important to revitalise the system of Academies, and their structure and organisational models needs to be further adapted to the challenges of the 21st century.

The science-policy advice process and the science-policy dialogue needs to be improved by creating effective links to policy makers and politicians in the longer term, to get the 'timeliness' of the advice right.

Today's grand challenges can only be solved in an interdisciplinary and cooperative way. The SAPEA consortium provides a framework in which Academies from different disciplines can work together on topics of mutual interest. During the workshops, a list of potential topics for future activities was assembled.

More efforts should be made to increase the involvement of stakeholders, in particular with: policy makers in governments, civil society, NGOs, media and businesses.

- New approaches on how to communicate science advice more effectively, not only to policy makers but to the general public, should be explored. Academies could consider increased use of social media.
- SAPEA can help generate a stronger impact for Academies at regional and national level, because being part of a larger network gives a wider perspective. SAPEA can generate more impact for issues that go beyond national boarders, in that sense cooperation and interaction among Academies was seen as a primary requisite to solve problems and global challenges.
- Young Academies and the involvement of young Fellows should be promoted by creating links with Young National Academies; more Young Fellows mentorship schemes and associated memberships for young scientists should be developed.

In his closing statement, SAPEA Board representative Ole Petersen emphasised that "science for policy will become more important as the availability of information increases. Policy makers should make use of the best available scientific knowledge and the independence and scientific integrity based on excellence". The transparency of Academies' working processes is an important asset in this regard.

6.2 Participants' feedback and further actions

A formal evaluation was conducted via questionnaire and completed by the attendees of the workshop. The workshop format was positively approved, and its atmosphere was judged to be open and respectful. The participants appreciated the cross-cutting workshop arrangement. They found it beneficial to compare experiences with representatives from different Academy backgrounds in order to gain new insights. They also informed that it was helpful to have the possibility to ask practical questions.

The break-out sessions, long discussions and Q&A were particularly appreciated. The respondents stated that they gained new insights. They attributed this to the broad range of Academies' case studies and the possibility to interact with Academies' representatives outside their network and field.

The written evaluations and verbal feedback and comments indicated that there would be interest among European Academies in continuing the dialogue. Suggestions were put forward about a future workshop that would gather all European Academies together again, and meet delegates' needs, such as:

- Participants expressed interest in learning more about stakeholder involvement, mostly in strengthening the dialogue with citizens and politicians.
- They would like to have more ad-hoc training in how to communicate with stakeholders, how to choose effective techniques and tools to communicate.
- There is a need to strengthen the uptake of scientific evidence into policy making; Academies stressed that training should go both ways, and they suggested 'summer schools' for politicians or pairing schemes with scientists.
- There is interest in creating a platform to exchange ideas.
- There is a need to develop skills for dialogue between science and policy.

In light of these requests, it was suggested that a follow-up workshop will be organised, which would aim to further explore progress and solutions for the issues raised during the first two workshops (as described above). In addition, it will be useful for Academies to better understand the mechanisms of the SAPEA operating procedures (such as nomination and selection process, endorsement, evidence review methods, etc.) and public engagement activities. The workshop should also inform SAPEA about the Academies' experiences. It is recommended that a similar survey is conducted at the end of the SAPEA project as the one conducted before the two workshops, to evaluate whether expectations have been met.

ANNEXES

Annex A
Workshop programmes

Royal Academy of Engineering of Spain, Calle Don Pedro 10, Madrid

Day 1 (21 September 2017)

Introduction	
10:30	Registration and welcome
11:00	Welcome by President of Royal Academy of Spain and other Spanish Academies *Elías Fereres, President of Royal Academy of Engineers* *Joaquín Poch, President of Royal Academy of Medicine* *José Elguero, President of Royal Academy of Sciences*
Session 1: Introduction to the workshop	
11:30	Aims of the workshop, outline of workshop structure and sessions *Yves Caristan, Euro-CASE*
	Presentation of survey results: What are their activities and challenges? What do participants want to get out of this workshop? *Antonella di Trapani* *Thomas Stehnken*
Lunch	
Session 2: The role of European Academies: challenges and opportunities	
13:00	Breaking the ice: challenges and perspectives from different Academies ◗ Working models and organisational structure ◗ Funding and staff resources ◗ National vs international matters ◗ Large vs small Academies *Anna Plate-Zyberk, PAN* *Erik van de Linde, KNAW* *Vladimir Podkopaev, National Academy of Sciences of Belarus* *Magnus Breidne, Royal Swedish Academy of Engineering Sciences*
14:00	Fishbowl activity: challenges faced by Academies ◗ Large vs small Academies ◗ With regard to (some of) the above challenges, what constitutes success for your Academy? ◗ What are the barriers and how can they be overcome? ◗ How could Academy networks help? *Moderators: SAPEA SPOs*
15:00	Brief plenary moment of Session 1
Coffee break	

Session 3: Activities and best practices in Academies	
16:00	Activities and best practices in acatech *Thomas Stehnken, acatech*
16:15	Parallel breakout sessions: ◗ Strategies used for promoting activities and topic selection in policy advice ◗ Quality assurance and peer review of scientific advice ◗ Stakeholder engagement and impact *Moderators: SAPEA SPOs*
17:15	Rapporteur reports from breakout sessions
Summary of day 1 and outlook to day 2	
Social dinner	

Day 2 (22 September 2017)

Session 4: Fostering and enhancing networking and collaboration among European Academies	
09:00	Presentations of different SAPEA netgworks and other initiatives: What is the added value? How can they help? *Matthias Johannsen, ALLEA* *Ricard Guerrero, Louise Edwards, Esther Dorado, Academia Europaea* *Silvia Bottaro, FEAM Forum*
09:30	Other networking initiatives *Javier de Vargas, CAETS* *Nina Hobbhahn, EASAC/IAP*
09:50	Benefits and impacts of international interdisciplinary scientific cooperation *Rolf Hügli, Swiss Academy*
10:10	Open discussion with participants
Coffee break	
11:00	Break-out session: Twinning exercise between well-resourced and less-endowed Academies *Moderator: SAPEA SPOs*
11:45	Rapporteur reports from breakout sessions
Lunch	

Session 5: Providing science advice for policy: SAM and SAPEA for European Academies	
13:00	The need for evidence-based advice and policymaking in the EU *Günter Stock, Chair of SAPEA board*
13:20	What a policymaker wants and does not want from Academies *Johannes Klumpers, European Commission SAM unit*
13:40	What Academies can and cannot provide to policymakers *Alan Walker, Royal Academy of Engineering (UK)*
14:00	Panel discussion: Academy experiences with providing scientific advice: examples and discussion *Günter Stock, Chair of SAPEA board* *Johannes Klumpers, European Commission SAM unit* *Alan Walker, Royal Academy of Engineering (UK)* *Ilze Trapenciere, Latvian Academy of Sciences* *Marcel Swart, Young Academy of Europe*
Coffee break	
15:00	Parallel breakout sessions: ◗ How Academies can best participate in and contribute to SAPEA ◗ Identification of suitable bottom-up topics for SAPEA ◗ Benefits of contributing to SAPEA *Moderators: SAPEA SPOs*
15:45	Rapporteur reports from breakout sessions
16:15	Wrap-up, reminder of resulting workshop report as guidance and opportunities provided by SAPEA
End of workshop	

ASTR-AGIR, Calea Victoriei 118, Bucharest, Romania

Day 1 (16 October 2017)

Introduction	
10:30	Registration and welcome
11:00	Welcome by Presidents of host Romanian Academies *Bogdan C Simionescu, Vice-President of the Romanian Academy* *Ciprian Preda, Secretary of State at the Ministry for Research and Innovation* *Mihai Mihaita , President of the Romanian Academy for Technical Sciences* *Maria Dorobantu, Romanian Academy for Medical Sciences* *Gheorghe Sin, President of the Romanian Academy for Agriculture and Forestry*
Session 1: Introduction to the workshop	
11:30	Short introduction about SAPEA, aims of the workshop, outline of workshop structure and sessions *Yves Caristan, Euro-CASE*
	Presentation of survey results: What are their activities and challenges? What do participants want to get out of this workshop? *Antonella di Trapani*
Lunch	
Session 2: The role of European Academies: challenges and opportunities	
13:00	Breaking the ice: challenges and perspectives from different Academies ◗ Working models and organisational structure ◗ Funding and staff resources ◗ National vs international matters ◗ Large vs small Academies *Anton Anton, Romanian Academy for Technical Sciences* *Elizabeth Bohm, UK Medical Academy* *Patrizio Antici, Global Young Academy* *Hana Sychrova, Czech Academy of Sciences* *Maja Lænkholm, Danish Academy of Technical Sciences*
14:00	Fishbowl activity: challenges faced by Academies ◗ Large vs small Academies ◗ With regard to (some of) the above challenges, what constitutes success for your Academy? ◗ What are the barriers and how can they be overcome? ◗ How could Academy networks help? *Moderators: SAPEA staff*
15:00	Brief plenary moment of Session 1
Coffee break	

Session 3: Activities and best practices in Academies	
16:00	Activities and best practices in acatech *Thomas Stehnken, acatech*
16:15	Activities and best practices in Academies des Sciences *Daniel Malbert*
16:30	Break-out session: Twinning exercise between well-resourced and less-endowed Academies ◗ Industry and funding ◗ Young members' involvement ◗ Stakeholder engagement and impact ◗ Strategies used for promoting activities and topics selection in policy advice ◗ Quality assurance and peer review of scientific advice *Moderator: SAPEA staff*
17:30	Rapporteur reports from breakout sessions, Q&A

End of day 1

Social dinner

Day 2 (17 October 2017)

Session 4: Providing science advice for policy: SAM and SAPEA for European Academies	
09:00	The need for evidence-based advice and policymaking in the EU *Ole Petersen, SAPEA board*
09:20	What a policymaker wants and does not want from Academies *Ecaterina Andronescu, member of the Romanian parliament*
09:40	What Academies can and cannot provide to policymakers *Rapela Zaman, Royal Society (UK)*
10:00	Panel discussion: Academy experiences with providing scientific advice: examples and discussion *Ole Petersen, SAPEA board* *Ecaterina Andronescu, member of the Romanian parliament* *Rapela Zaman, Royal Society (UK)*

Coffee break

11:00	Breakout session: How can Academies feed into the SAPEA project? ◗ How Academies can best participate in and contribute to SAPEA ◗ Identification of suitable bottom-up topics for SAPEA ◗ Benefits of contributing to SAPEA *Moderators: SAPEA staff*
12:00	Rapporteur reports from breakout sessions

Lunch

Session 5: Fostering and enhancing networking and collaboration among European Academies	
13:30	Benefits and impacts of international interdisciplinary scientific cooperation *Roger Pfister, Swiss Academies of Arts and Sciences*
13:50	Different SAPEA Networks and other initiatives: ◗ What is their added value? ◗ How can they help? *Cosmas Lambini, ALLEA* *Tadeusz Luty,Esther Dorado, Academia Europaea* *Silvia Bottaro, FEAM Forum* *Hana Sychrova, EASAC/IAP*
14:30	Open discussion with participants: ◗ Opportunities and ideas for cooperation? ◗ Ideas for future workshops?
15:00	Wrap-up, reminder of resulting workshop report as guidance and opportunities provided by SAPEA
End of workshop	

Annex B
List of participants

First name	Surname	Position	Institution
Ecaterina	Andronescu	Member of Parliament	Romanian Academy for Technical Sciences (ASTR)
Patrizio	Antici	Executive Committee member	Global Young Academy
Anton	Anton	Professor	Romanian Academy for Technical Sciences (ASTR)
Pekka	Aula	Secretary General	Finnish Academy of Science and Letter
Yves	Bamberger	Working Committee's President	NATF France
Elizabeth	Bohm	Head of International	UK Academy of Medical Science
Silvia	Bottaro	FEAM Forum Policy Officer	FEAM
Magnus	Breidne	Vice-President, Projects and International Affairs	Royal Swedish Academy of Engineering Sciences (IVA)
Pere	Brunet	Head of International Relations Commission	Royal Academy of Engineering of Spain
Bojan	Bugarčić	Executive Director	Serbian Academy of Sciences and Arts
Salvator	Bushati	Chairman of the Section of Natural & Technical Sciences	Academy of Sciences of Albania
Yves	Caristan	Secretary General	Euro-CASE
Luc	Chefneux	Vice-Director of the "Technologie et Société" section	Académie royale de Belgique
Loucas	Christophorou	Permanent member	The Academy of Athens
Antonio	Colino	Secretary General	Royal Academy of Engineering of Spain
Antonella	Di Trapani	Science Policy Officer	Euro-CASE
Torbjørn	Digernes	President	Norwegian Academy of Technological Sciences
Esther	Dorado-Ladera	Executive Officer, AE Cardiff Knowledge Hub	Academia Europaea
Maria	Dorobantu	Fellow	Romanian Academy of Medical Sciences
Louise	Edwards	Hub Manager, AE Cardiff Knowledge Hub	Academia Europaea
José	Elguero	President	Royal Spanish Academy of Sciences (RACEFyN)
Anders	Elverhøi	Vice-President	The Norwegian Academy of Science and Letters
Gagik	Evoyan	Head of the International Relations Department	The National Academy of Science of the Republic of Armenia
Elías	Fereres	President	Royal Academy of Engineering of Spain
Carl	Gahmberg	Permanent Secretary	Finnish Society of Science and Letters
Jose Miguel	Garcia-Sagredo	Professor	Royal Academy of Medicine of Spain
Ricard	Guerrero	Academic Director, AE Barcelona Hub	Academia Europaea
Milos	Hayer	Secretary General	Engineering Academy of the Czech Republic
Nina	Hobbhahn	Scientific Policy Officer	EASAC - European Academies Science Advisory Council
Rolf	Hügli	Secretary General	Swiss Academy of Engineering Sciences (SATW)
Marlene	Iseli	Scientific Officer	Swiss Academy of Humanities and Social Sciences
Dimiter	Ivanov	Scientific Secretary	Bulgarian Academy of Sciences

First name	Surname	Position	Institution
Ioan	Jelev	Head of International Relation Department	Academy of Agricultural and Forestry Sciences Romania
Valeriu	Jinescu	Secretary General	Romanian Academy for Technical Sciences (ASTR)
Matthias	Johannsen	Executive Director	ALLEA
Wilhelm	Kappel	Senior Member	Romanian Academy for Technical Sciences (ASTR)
Slavko	Kaučič	Secretary General	Slovenian Academy of Engineering
Jennifer	Kenneally	Policy and International Relations Manager	Royal Irish Academy
Johannes	Klumpers	Head of SAM Unit	European Commission
Zvonko	Kusić	President	Croatian Academy of Sciences and Arts
Maja	Lænkholm	Head of International Affairs	The Danish Academy of Technical Sciences
Cosmas Kombat	Lambini	Science Policy Officer	ALLEA
Asa	Lindberg	Secretary General	The Swedish Academy of Engineering Sciences in Finland
Tadeusz	Luty	Academic Director, Wrocław Hub	Academia Europaea
Daniel	Malbert	Deputy Foreign Secretary	Academie des sciences de France
Manuel	Márquez	Vice-President	Royal Academy of Engineering of Spain
Mihai	Mihaita	President	Romanian Academy for Technical Sciences (ASTR)
Romina	Mihalache	Head of Foreign Relations Department	Romanian Academy
Hamed	Mobasser	Science Policy Officer	FEAM
Laura	Norton	Head of Communications	SAPEA
Panu	Nykänen	Secretary General	Council of Finnish Academies
Kristian	Overskaug	Secretary General	The Royal Norwegian Society of Sciences and Letters
Matteo	Pardo	Attaché Scientifique	Italian Consortium of Technology
Javier	Pérez de Vargas	CEO	Royal Academy of Engineering of Spain
Ole	Petersen	SAPEA Board Member	Academia Europaea
Luis Alberto	Petit	Fellow	Royal Academy of Engineering of Spain
Roger	Pfister	Head of International Cooperation	Swiss Academies of Arts and Sciences
Anna	Plater-Zyberk	Head of International relations	PAN (Polish Academy of Sciences)
Vladimir	Podkopaev	Head of International cooperation department	National Academy of Sciences of Belarus
Ciprian	Preda	Secretary of State	Romanian Ministry of Research and Innovation
David	Rios Insua	Member and Treasurer	Royal Spanish Academy of Sciences (RACEFyN)
José Manuel	Sanjurjo	Fellow	Royal Academy of Engineering of Spain
Gregor	Serša	Associate Member, Secretary of Section for Medical Sciences	Slovenian Academy of Sciences and Arts
Alberto	Silvani	Expert	Accademia Nazionale dei Lincei
Bogdan	Simionescu	Vice President	Romanian Academy
Gheorghe	Sin	President	Romanian Academy of Agriculture
Thomas	Stehnken	Science Policy Officer	acatech
Günter	Stock	Chair of SAPEA Board	ALLEA
Marcel	Swart	Chair YAE	Young Academy of Europe

First name	Surname	Position	Institution
Hana	Sychrova	Academy Council's Member	The Czech Academy of Sciences
Florin	Tanasescu	Vice-President	Romanian Academy for Technical Sciences (ASTR)
Myriam	Tapernoux	Head of Science Department	Swiss Academy of Medical Sciences
Robert	Thijssen	General Secretary	Netherlands Academy of Technology and Innovation (AcTi)
Ilze	Trapenciere	Advisor to the President, Head, Department of International Relations	Latvian Academy of Sciences
Jesus	Tresguerres	Professor	Royal Academy of Medicine of Spain
Erik	van de Linde	Director International Affairs	Royal Netherlands Academy of Arts and Sciences (KNAW)
Joseph (Joos)	Vandewalle	President	KVAB Royal Flemish Academy of Sciences and Arts of Belgium
Alan	Walker	Head of Policy	Royal Academy of Engineering UK
Rapela	Zaman	Director of International Affairs	The Royal Society UK

Annex C
List of presentations

- Academia Europaea, Louise Edwards & Esther Dorado-Ladera
- Academie des Sciences, Daniel Malbert
- Academy of Medical Sciences, Elisabeth Bohm
- Academy of Science of Belarus, Vladimir Podkopaev
- acatech, Thomas Stehnken
- AE/SAPEA, Ole Petersen
- ALLEA, Matthias Johanssen & Cosmas Lambini
- ALLEA/SAPEA, Gunter Stock
- ATV, Maja Lænkholm
- CAETS, Javier de Vargas
- Czech Academy of Sciences, Hana Sychrova
- EASAC & IAP, Nina Hobbhahn
- EC DG RTD SAM, Johannes Klumpers
- Euro-CASE, Yves Caristan
- FEAM, Silvia Bottaro
- Global Young Academy, Patrizio Antici
- Latvia Academy of Science,
- PAN, Anna Plater-Zyberk
- RAEng, Alan Walker
- Romanian Academy of Technology, Anton Anton
- Royal Society, Rapela Zaman
- SATW, Rolf Huegli
- Swiss Academies, Roger Pfister

Presentations are available to download from **www.sapea.info/interactions2017**.

Annex D
List of survey questions

What is the focus of your Academy?
Answers: Medicine, Science, Humanities, Technology, Others- please specify

How many Fellows does your Academy have?
Answers: 0-50, 50-100, 100-200, >200

How many staff members work for your Academy?
Answers: <5, 5-10, 10-20, >20

What are the main challenges of your Academy?
Answers: Lack of funding, lack of involvement from Fellows, lack of international cooperation, lack of visibility, others, please specify

What are the main activities of your Academy?
Answers: Policy advice for government, organisation of conferences, networking among Fellows, networking with external experts, championing of disciplines, others-please specify

What is your self-assessment of the impact of your disciplines?
Answers: 1 low, 5 excellent

Do you collaborate with other Academies?
Answers: Yes, No

What are the main challenges for cooperating with other Academies?
Answers: lack of funding, lack of people, lack of expertise, lack of contacts, not a priority for the Academy

Do you exchange reports, experts and information with other Academies?
Answers: Yes, No

Do you feel you have enough information about the SAPEA project?
Answers: Yes, No

In your opinion, what are the main benefits of contributing to SAPEA?
Answers: Increased visibility at national level, increased visibility at international level, increased engagement with fellows, development of skills to drive scientific advice for policy, providing Fellows/experts with the possibility to exchange knowledge and expertise, Better collaboration with other Academies, development of work on interdisciplinary topics, increase funding, others-please specify

If you could select one interdisciplinary topic for scientific advice at European level, what it could be?
Answer: free box

Do you have any topics you would like to develop during the workshop?

Annex E
Outreach and dissemination

Coverage of the two workshops in national newspapers raised awareness of the Academies' and SAPEA's Work among the wider public and policymakers, in El Mundo (**http://www.elmundo.es/economia/2017/10/18/59e73c21468aeb43458b461d.html**), and in several Romanian magazines (links below):

- http://www.economistul.ro/stiri-si-analize-business/suport-academic-pentru-decizie-politica-4003
- http://www.goodagency.ro/
- https://www.libertatea.ro/stiri/cercetatorii-vor-sa-ii-consilieze-pe-politicieni-ca-sa-nu-mai-faca-legi-bajbaite-2003709
- http://www.marketwatch.ro/articol/15778/Consultanta_stiintifica_pentru_politicieni_o_prioritate_a_CE/

Annex F
Acknowledgements

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- Cosmas Lambini (ALLEA)
- Esther Dorado-Ladera (Academia Europaea)
- Jacqueline Whyte (acatech)
- Hamed Mobasser (FEAM)
- Laura Norton (ALLEA)
- Louise Edwards (Academia Europaea)
- Matthias Johannsen (ALLEA)
- Nadia Pipunic (Euro-CASE)
- Nina Hobbhahn (EASAC)
- Thomas Stehnken (acatech)
- Wolf Gehrisch (Euro-CASE)
- Yves Caristan (Euro-CASE)

About SAPEA

Spanning the disciplines of engineering, humanities, medicine, natural sciences and social sciences, SAPEA (Science Advice for Policy by European Academies) brings together the outstanding knowledge and expertise from over 100 academies, young academies and learned societies in more than 40 countries across Europe.

SAPEA is part of the European Scientific Advice Mechanism, which provides independent, interdisciplinary and evidence-based scientific advice on policy issues to the European Commission. SAPEA works closely with the European Commission Group of Chief Scientific Advisors.

This report can be viewed online at www.sapea.info/interactions2017

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