



9. Scientific advice for fisheries management in the European Union: transnational science diplomacy in practice

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1. Introduction

The European Commission has indicated that European and global research infrastructures can and should be mobilized as important tools and sites of science diplomacy¹. At the international level, a key element of these infrastructures is the healthy functioning of a science advice system able to inform the development of policy. Against this backdrop, this report focuses on scientific advice structures within the EU, and their contribution to wider EU science diplomacy.

While scientific advice can include informal networks and unsolicited inputs, the focus of this case study is on the formal infrastructures of solicited expert advice that provide input to EU decision-making processes. The EU science advisory system involves the convening of international experts in dialogue with governments and other stakeholders, and therefore constitutes a site in which transnational issues are deliberated and negotiated. These processes can benefit from being analysed and understood through the lens of science diplomacy.

To provide a specific context of transnational policy significance, this case looks in detail at the science advisory bodies involved in the provision of advice for fisheries. The annual negotiation of fishing quotas between the EU and its nearest neighbours relies on routine inputs of expert advice about the status and trends of fish stocks. The implementation of the Common Fisheries Policy also requires scientific, technical, economic and social inputs of various kinds. As a long-standing issue, the scientific advisory and evidentiary of fisheries management in the EU involves organisations that are over 100 years old. However, it is also at the forefront of new attempts to construct authoritative science advisory structures in the EU that have risen in recent years.

Scholarship on the structures and functions of scientific advisory bodies has demonstrated their role in the evidence ecosystem for decision-making.² This case study report provides some historical background to the development of science advice for fisheries management in the EU; sets out information on the governance arrangements and actors involved; and identifies potential insights and implications from this case study of broader relevance and application to our understanding of EU science diplomacy.

The role of scientific advice in fisheries management is a good example of science diplomacy in practice. In line with definitions developed elsewhere in the S4D4C project, we understand science diplomacy as a “fluid concept...[and] a “meta-governance framework”³, which involves “collaborations between stakeholders from science, policy and diplomacy...various governmental or diplomatic organisations as well as non-governmental scientific organisations.”⁴

The case study was developed through a mix of desk-based research, semi-structured interviews and participant observation, between June 2018 and March 2019. Desk-based research was directed towards the collection of official documents from EU websites and an analysis of existing academic scholarship on science advice systems. This research was guided by insights gathered through interviews and observations, as well as from discussions with case study collaborators in the S4D4C project. A set of seven semi-

¹ EU Commission (2015): The EU approach to science diplomacy. Retrieved from: https://ec.europa.eu/commission/commissioners/2014-2019/moedas/announcements/eu-approach-science-diplomacy_en

² Wilsdon, J., R. Doubleday (eds.) (2015): Future Directions for Scientific Advice in Europe. Cambridge: Centre for Science and Policy. Retrieved from: <http://www.csap.cam.ac.uk/media/uploads/files/1/future-directions-for-scientific-advice-in-europe-v10.pdf>

³ Flink, T, C. Rungius (2018): Science Diplomacy in the EU: Practices and Prospects. S4D4C Project Brief No.1, October 2018.

⁴ Aukes, E. et al (2020): Towards effective science diplomacy practice. S4D4C Policy Brief No.2, January 2020.

structured interviews were carried out face-to-face or on the telephone, and one structured interview via email. These included interviews with:

- Two contributors to the Scientific, Technical and Economic Committee for Fisheries (STECF)
- One representative from and one contributor to the International Council for the Exploration of the Sea (ICES)
- One representative from Science Advice for Policy by European Academies (SAPEA)
- One representative from European Commission Scientific Advisory mechanism (EC-SAM)
- One member of the EU Commission Group of Chief Scientific Advisors (GCSA)
- One representative of the EU Commission

Participant observation was carried out during an STECF expert working group meeting in late 2018. This meeting was selectively sampled for convenience due to the availability of the researcher. The research was granted ethical approval by the University of Sheffield Research Ethics Committee in July 2018.

2. Governance arrangements and background of the case

The importance of effective science advice to democratic political systems is gaining increased attention internationally. Today, science advice typically refers to formal structures through which governments obtain scientific and technical information for decision-making. In an EU context, science advice has been defined as:

*"all the processes and structures aimed at providing scientific knowledge and information to the attention of policy- and decision-makers."*⁵

While science advice might appear to be self-evident and liable for replicated arrangements at different sites and scales, research has shown how science advice is deeply cultural. The formal structures through which scientific knowledge is produced and validated have a tendency to adhere to the political cultures in which science advice systems emerge, which at the national level have been termed 'civic epistemologies'⁶. As guidance to the EU Parliament in 2016 noted:

*"various structures and institutions [of science advice] exist or have been established at national and international levels. This diversity reflects the different cultures, traditions and political contexts of policy-making."*⁷

To make sense of this diversity, the structures of science advice have been divided into three categories depending on their relationship to the policy processes that they advise⁸. These include:

- External bodies: Such as academies, learned societies and research organisations
- Mandated bodies: Such as permanent or ad hoc advisory structures
- Internal bodies: Such as in-house technical and scientific support and individual scientific advisers

⁵ EU Parliament (2016): Scientific advice for policy-makers in the European Union. Retrieved from: [http://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI\(2016\)589777](http://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI(2016)589777)

⁶ Jasanoff, S. (2005): *Designs on Nature: Science and Democracy in Europe and the United States*, Princeton: Oxford: Princeton University Press.

⁷ EU Parliament (2016): Scientific advice for policy-makers in the European Union. Retrieved from: [http://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI\(2016\)589777](http://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI(2016)589777)

⁸ EU Parliament (2016): Scientific advice for policy-makers in the European Union. Retrieved from: [http://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI\(2016\)589777](http://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI(2016)589777) ; OECD (2015): *Scientific Advice for Policy Making*. Retrieved from: https://www.oecd-ilibrary.org/science-and-technology/scientific-advice-for-policy-making_5js3311jcpwb-en

Despite the different structures and political cultures in different national settings, there are increased efforts to share lessons across countries about successes and failures in the implementation of different science advice arrangements. For example, the International Network for Government Science Advice (INGSA) was established in 2014 as a network of practitioners and researchers with the aim:

*"to share experience, build capacities, and develop theoretical and practical approaches to the use of scientific evidence in informing policy at all levels of government."*⁹

The growing attention to science advice is also illustrated by an amplification of academic scholarship, sometimes referred to as 'the science of science advice'¹⁰. This scholarship is applying lenses and methods from policy studies, science and technology studies and other social science approaches to understand the workings of science advice as a social activity, which can and should be examined empirically to derive lessons for its future development.

The EU is a central player in these developments, having featured as an analytical case in numerous academic studies¹¹ and been the subject of practitioner workshops seeking to better implement evidence use in decision-making¹².

1.1 Science advice in the EU

The EU Commission has recognised evidence as a core part of EU decision-making. Guidelines produced in 2002, for example, set out its ambition to create "a sound knowledge base for better policies". Through these guidelines it was hoped that the Commission could thereby:

*"encapsulate and promote good practices related to the collection and use of expertise at all stages of Commission policy-making"*¹³.

Indeed, the centrality of scientific and technical knowledge to the decision-making of the EU was captured in a reflection by the former Chief Scientific Adviser to the EU President, Anne Glover¹⁴, who commented:

"EU policies are much more technical than national policies; this is because the bulk of them are about standardisation and harmonisation, which at the end of the day boils down to scientific-technical matters. Science is therefore crucial at the EU level."

While the centrality of science to its policy making would suggest the EU has tried and tested mechanisms for science advice, as with many national settings, the formal structures for science advice in the EU are still emergent, experimental and often contested¹⁵. Indeed, as a multi-level governance structure sui generis, the EU does not

⁹ INGSA (2019): International Network for Government Science Advice. Retrieved from: <https://www.ingsa.org>

¹⁰ Jasanoff, S. (2013): The science of science advice. In: Doubleday R and Wilsdon J (eds): Future Directions for Scientific Advice in Whitehall. pp. 62-69.

¹¹ Wilsdon, J., R. Doubleday (2015): Future Directions for Scientific Advice in Europe. Cambridge: Centre for Science and Policy, University of Cambridge.

¹² JRC (2017): Workshop: EU4FACTS: Evidence for policy in a post-fact world. Brussels. 26 September 2017. Retrieved from: <https://ec.europa.eu/jrc/en/eu4facts>

¹³ EU Commission (2002): On the collection and use of expertise by the Commission. Retrieved from: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2002:0713:FIN:EN:PDF%20>

¹⁴ Glover, A. (2015): A moment of magic realism in the European Commission. In: Wilsdon, J, R. Doubleday (eds): Future Directions for Scientific Advice in Europe. Cambridge: Centre for Science and Policy, University of Cambridge, pp. 60-81.

¹⁵ See overview in: Wilsdon, J., R. Doubleday (2015): Future Directions for Scientific Advice in Europe. Cambridge: Centre for Science and Policy, University of Cambridge

have a single national culture – or civic epistemology¹⁶ – for how knowledge is produced and validated (indeed there is greater diversity across its Member States¹⁷). As this case study illustrates, this creates challenges for the design and implementation of an authoritative science advice system at the EU level.

2.2 Fisheries governance

To examine the science advice system of the EU, this case study draws its attention to the particular governance challenge of fisheries. The EU caught a total of 5.3 million tonnes of fish by live weight in 2017¹⁸ at a value of around €7.38 billion¹⁹. Fishing industries can be a significant symbolic, if not economic, part of national cultures in the EU, and the management of fisheries requires careful negotiations between the EU Member States. It is particularly challenging because fish stocks can be considered to be a common pool resource: they frequently travel across the borders of territorial waters and exploitation of the resource by one party can limit the extent to which others can benefit from it. Furthermore, while fish are considered by some to be a renewable resource, they are also a vulnerable resource. Overfishing can and has led to the collapse of fish stocks – hardly is there a better example for the commons dilemma²⁰ –, and without careful management of fisheries activity long term and irreversible damage to the resource can take place. It is for this reason that scientific input is considered so necessary to understand the state of fish stocks and the potential impacts that fisheries will have on them. This allows the governments to consider the quotas and fishing effort that will be invested in different stocks.

The management of fisheries in the EU is largely through the Common Fisheries Policy (CFP). First established in 1970, the CFP provides a set of rules and mechanisms for the management of European fishing fleets in order to protect the sustainability of fish stocks.²¹ Its aim is:

*"to ensure that fishing and aquaculture are environmentally, economically and socially sustainable and that they provide a source of healthy food for EU citizens. Its goal is to foster a dynamic fishing industry and ensure a fair standard of living for fishing communities."*²²

The CFP has undergone periodic updates and was most recently revised in 2014.²³ The major features of the CFP address four policy areas²⁴:

1. Fisheries management focused on access to waters, fishing efforts, and technical measures²⁵

¹⁶ Jasanoff, S. (2005): *Designs on Nature: Science and Democracy in Europe and the United States*, Princeton: Oxford: Princeton University Press.

¹⁷ Šucha, V., D. Wilkinson, D. Mair, et al. (2015): *The in-house science service: The evolving role of the Joint Research Centre*. In: Wilsdon, J., R. Doubleday (eds): *Future Directions for Scientific Advice in Europe*. Cambridge: Centre for Science and Policy, University of Cambridge, pp. 42-51.

¹⁸ EU Commission (2018): Eurostat: Fishery statistics. Retrieved from:

https://ec.europa.eu/eurostat/statistics-explained/index.php/Fishery_statistics#Total_fisheries_production_and_employment

¹⁹ EU Commission (2018): *The EU fish market*. Retrieved from: https://ec.europa.eu/fisheries/press/eu-fish-market-2018-edition-out_en

²⁰ For a seminal article, see: Berkes, F. (1985): *Fishermen and 'The Tragedy of the Commons*. In: *Environmental Conservation*, 12(3), pp. 199-206.

²¹ EU Commission (2019): *Common Fisheries Policy*. Retrieved from: https://ec.europa.eu/fisheries/cfp_en

²² *Ibid.*

²³ *Ibid.*

²⁴ *Ibid.*

²⁵ EU Commission (2019): *Fishing Rules*. Retrieved from: https://ec.europa.eu/fisheries/cfp/fishing_rules

2. International policy focused on fishing activities that take place outside of the EU and international cooperation on fisheries²⁶
3. Market and trade policy focused on managing the market in fishery and aquaculture products²⁷
4. Funding of the policy and other investments in fisheries

In order to implement the CFP, scientific advice is considered necessary in a number of ways.

2.3 Fisheries science advice

The CFP has a stipulation that requires the Commission to take “into account available scientific, technical and economic advice”²⁸ in drafting proposals of legislation for the European Parliament and Council. Information from the EU Commission on the CFP states:

“Scientific advice is the basis for good policy making, setting fishing opportunities according to the state and productivity of fish stocks.”²⁹

The Commission identifies the following key issues that require frequent sources of scientific advice:

- The determination of maximum sustainable yield, “the best possible objective for renewable and profitable fisheries, harvesting the maximum amount of fish on a long term basis.”³⁰
- The development of multi-annual plans that “contain the goals and tools for fish stock management and the roadmap to achieving the objectives in a sustainable and inclusive way.”³¹

Science advice for fisheries has a long history in Europe, and involves the breadth of internal, external and mandated structures for bringing scientific knowledge into the decision-making process. The stakeholder landscape is set out in the following section.

3. Stakeholder landscape

The various institutions and instruments that define the interconnected fields of science advice in the EU; fisheries governance; and fisheries science advice are set out below.

3.1 Science Advice in the EU

Due to its complexity, and the range and interdependency of actors involved, the science advice system in the EU can be likened to an ecosystem. As with national settings with well-developed science advice systems, such as the UK³², there is no single structure that

²⁶ EU Commission (2019): International Fisheries. Retrieved from: <https://ec.europa.eu/fisheries/cfp/international>

²⁷ EU Commission (2019): Fisheries Market. Retrieved from: <https://ec.europa.eu/fisheries/cfp/market>

²⁸ EU (2013): Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC. Off J Eur Union L 354:22–61. p. 32

²⁹ EU Commission (2019): Common Fisheries Policy: Management. Retrieved from: https://ec.europa.eu/fisheries/sites/fisheries/files/docs/body/2015-cfp-management_en.pdf

³⁰ Ibid.

³¹ Ibid.

³² Wilsdon, J., R. Doubleday (2013): Future Directions for Scientific Advice in Whitehall. Cambridge: Centre for Science and Policy, University of Cambridge.

provides scientific knowledge into the decision-making process, rather there are a range of structures that include a mix of external bodies; mandated bodies; and internal bodies that each contribute input to the decision-making process. Taken in its totality, science advice in the EU is most prominent in the work of three structural features.

First, the Joint Research Centre (JRC) that was established in 1957 and is now a core part of the science advisory system of the EU³³. Often described as the EU Commission's in-house science service³⁴, the JRC employs over 3000 people and has an annual budget of around €330 million, which it directs towards scientific and technical advice for EU policy making³⁵. The JRC has headquarters in Brussels, and research sites in five Member States: Geel (Belgium), Ispra (Italy), Karlsruhe (Germany), Petten (the Netherlands) and Seville (Spain)³⁶, and states that its "researchers provide EU and national authorities with solid facts and independent support to help tackle the big challenges facing our societies today."³⁷

Second, the position of Chief Scientific Adviser (2012-2014) and now the Group of Chief Scientific Advisers (2015-) are a central feature of the EU science advice system as a whole. This evolving set of positions has provided figure heads for science advice in the EU system, and details of this history are set out further in the case study below.

Third, the agencies and committees that provide requested advice direct to the EU Commission³⁸. Many of these have been in operation since the 1980s, and are generally specifically constituted to provide advice on particular areas of the Commissions operations. The Commission expert groups³⁹ "advise the Commission in relation to:

- the preparation of legislative proposals and policy initiatives
- the preparation of delegated acts
- the implementation of EU legislation, programmes and policies, including coordination and cooperation with Member States and stakeholders in that regard
- where necessary, the preparation of implementing acts at an early stage, before they are submitted to the committee in accordance with Regulation (EU) No 182/2011."⁴⁰

To gain a better understanding of how the different parts of the system work in practice, it is possible to draw attention to the more specific arrangements for a given topical area: in this case, fisheries. Paying attention to a particular topical area brings complexity into the case in a way that cannot be achieved by looking at the general processes of science advice within the EU.

³³ EU Commission (2019): Highlights of the JRC: 50 Years in Science. Retrieved from: https://ec.europa.eu/jrc/sites/jrcsh/files/jrc_50_years_brochure_en.pdf

³⁴ Šucha, V., D. Wilkinson, D. Mair, et al. (2015): The in-house science service: The evolving role of the Joint Research Centre. In: Wilsdon, J., R. Doubleday (eds): Future Directions for Scientific Advice in Europe. Cambridge: Centre for Science and Policy, University of Cambridge, pp. 42-51.

³⁵ EU Commission (2019): JRC: Organisation. Retrieved from: <https://ec.europa.eu/jrc/en/about/organisation>

³⁶ EU Commission (2019): JRC: Science and knowledge management at the service of Europe's citizens. Retrieved from: https://ec.europa.eu/jrc/sites/jrcsh/files/jrc_paper-eu-policy-making-based-on-facts.pdf

³⁷ Ibid.

³⁸ EU Commission (2019): Expert Groups Explained. Retrieved from: <http://ec.europa.eu/transparency/regexpert/index.cfm?do=faq.faq&aide=2>

³⁹ Ibid.

⁴⁰ EU (2011): Regulation (EU) No 182/2011. Retrieved from: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32011R0182&from=EN>

3.2 Fisheries Governance

Fisheries management is a long-standing issue in the European Union with well-established governance arrangements. As previously set out, fisheries are mostly coordinated through the Common Fisheries Policy (CFP). The CFP is implemented by the European Commission whose work in this area is carried out by the Directorate-General for Maritime Affairs and Fisheries (DG MARE). The remit of DG MARE⁴¹ is to:

- “ensure that the ocean resources are used sustainably and that coastal communities and the fishing sector have a prosperous future
- promote maritime policies and stimulate a sustainable blue economy
- promote ocean governance at international level”

One of the most prominent components of the CFP is the allocation of fishing quotas to Member States. This requires an agreement on total allowable catches (TACs), which are the total allowable commercial fishing catch per year across the whole EU that are agreed by Member States based on proposals set out by the Commission.⁴² The TACs for each fish stock are then shared out among the EU Member States through national quotas.⁴³ In the allocation of quotas for fisheries, Member States are represented in the Agriculture and Fisheries Council where national quotas are allocated by political agreement.⁴⁴ Member States are allocated quota based on maintaining relative stability in the system, with recognition of historical catch data and the needs of coastal communities that are dependent on fisheries.⁴⁵ More recently, efforts have been made to provide for longer-range planning. In 2014, the EU Commission proposed the development of multiannual plans, which include goals for fish stock management that work towards a maximum sustainable yield (the largest catch that can be taken from a species' stock to maintain the size of the population).⁴⁶

3.3 Fisheries science advice

There is a wide range of science advice structures that provide science advice for fisheries management.

- The Scientific, Technical and Economic Committee for Fisheries (STECF): a Commission expert group established in 1993 reporting directly to the Commission with advice on fisheries management⁴⁷.
- The International Council for the Exploration of the Sea (ICES): an intergovernmental membership organisation founded in 1902, which provides advice to the EU, other governments, and organisations⁴⁸.
- The Scientific Advisory Committee (SAC) of the General Fisheries Commission for the Mediterranean (GFCM) that was established in 1952 as a regional fisheries

⁴¹ EU Commission (2019): Maritime Affairs and Fisheries. Retrieved from: https://ec.europa.eu/info/departments/maritime-affairs-and-fisheries_en

⁴² EU Council (2019): Management of the EU's fish stocks. Retrieved from: <https://www.consilium.europa.eu/en/policies/eu-fish-stocks/>

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Institute for Government (2018): Common Fisheries Policy. Retrieved from: <https://www.instituteforgovernment.org.uk/explainers/common-fisheries-policy>

⁴⁶ EU Council (2019): Management of the EU's fish stocks. Retrieved from: <https://www.consilium.europa.eu/en/policies/eu-fish-stocks/>

⁴⁷ EU Commission (2019): Scientific advice on managing fish stocks. Retrieved from: https://ec.europa.eu/fisheries/cfp/fishing_rules/scientific_advice

⁴⁸ Ibid.

management organisation⁴⁹. The SAC offers advice for decision-making of the GFCM.

- Ad-hoc advice from the scientific committees of regional fisheries organisations and regional fisheries management organisations relating to fishing activities outside of EU waters⁵⁰.
- Ad-hoc advice from scientific cooperation between EU and non-EU scientific communities relating to fisheries partnership agreements with non-EU coastal countries⁵¹.
- Ad-hoc advice from the Commission's Joint Research Centre⁵².

The science advice system for fisheries is therefore a complex arrangement of structures, which reflect more of a science advisory ecosystem (Figure 1). To better understand the workings of some of these structures, this report turns in the next section to examine three comparative case studies of science advice bodies for fisheries in the EU: the STECF; ICES; and the more recently created Scientific Advice Mechanism (SAM).

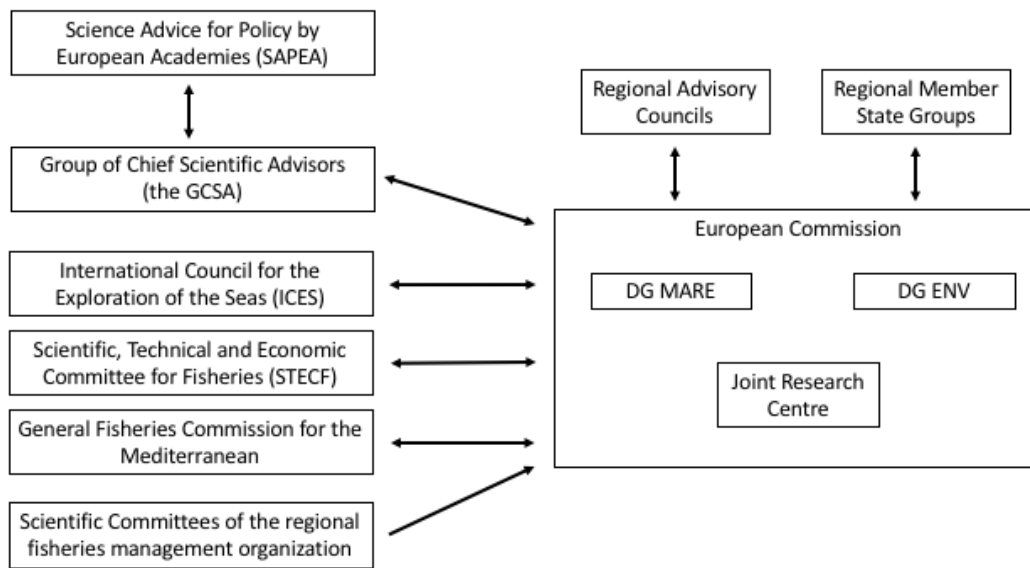


Figure 1: An overview of the advisory system for fisheries in the EU, including the Common Fisheries Policy and related strategy (adapted from Ballesteros et al. 2017⁵³). Directional arrows denote request and provision of advice.

⁴⁹ Ibid.

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² Ibid.

⁵³ Ballesteros, M., R. Chapela, P. Ramírez-Monsalve, et al. (2017): Do not shoot the messenger: ICES advice for an ecosystem approach to fisheries management in the European Union. In: ICES Journal of Marine Science 75(2): pp. 519-530.

4. A comparison of three types of science advice

This section compares the work of three different expert groups who provide science advice for fisheries within the EU. Each example focuses on a formal science advice body that provides scientific input to the decision-making processes for EU fisheries, but operating under different rules of procedure and fulfilling different functions. By comparing these examples a number of important insights about de facto governance practices emerge and these insights are presented below. The implications for science diplomacy are discussed in the next section (Section 5).

4.1 Example One: The Scientific, Technical and Economic Committee of Fisheries (STECF)

The Scientific, Technical and Economic Committee for Fisheries (STECF) was established in 1993 as a Commission expert group providing advice on fisheries management⁵⁴. The STECF is not a permanent body, but is instead better understood as an organised pool of experts that act on a temporary basis either as members of the STECF or as experts that contribute to its working groups⁵⁵.

4.1.1 What is the mandate?

The Commission is expected under the CFP to consult STECF on:

*"matters pertaining to the conservation and management of living marine resources, including biological, economic, environmental, social and technical considerations."*⁵⁶

The STECF in turn is expected to provide expertise in the form of scientific advice drawing on:

*"marine and fisheries biology, fishing gear technology, fisheries economics, fisheries governance, ecosystem effects of fisheries, aquaculture or similar disciplines"*⁵⁷.

The STECF operates under the rules of procedure for commission expert groups⁵⁸. The work of the STECF takes place under the principles of excellence, independence and transparency⁵⁹.

⁵⁴ EU Commission (2019): Scientific advice on managing fish stocks. Retrieved from: https://ec.europa.eu/fisheries/cfp/fishing_rules/scientific_advice

⁵⁵ Ibid.

⁵⁶ Article 26 of European Parliament and Council Regulation (EU) No 1380/2013

⁵⁷ Articles 3 of Commission Decision of 25 February 2016 setting up a Scientific, Technical and Economic Committee for Fisheries (2016/C 74/05)

⁵⁸ Art 7(7) of Commission Decision (2016/C 74/05)

⁵⁹ EU Commission (2019): About STECF. Retrieved from: <https://stecf.jrc.ec.europa.eu/about-stecf>

4.1.2 Who are the experts?

The Experts of STECF are appointed directly by the Commission⁶⁰. The STECF has a membership of between 30 and 35 experts. Each member of the STECF is generally appointed by the Director General of DG Maritime Affairs and Fisheries for a period of three years⁶¹. The members of STECF are selected by the Commission as independent experts and not as representatives of EU Member States. As an STECF contributor explained:

"you apply to be part of the committee but the Commission selects, so Member States have no control over who is actually on the committee, only as far as if they want to, a member state laboratory for example could say to a scientist, "We'd like you to apply because we'd really like to have somebody on STECF", but it's also completely open, STECF is completely open to scientists from anywhere just as experts, as independents."⁶²

Experts contribute to STECF either as committee members, or as experts that attend expert working group meetings. As is set out below, the committee is ultimately responsible for providing advice, whereas the expert working groups carry out the underlying technical synthesis. The independence of experts contributing to both the committee and the expert working groups is reinforced in STECF meetings, where experts are reminded that they are there in their own capacity.⁶³

4.1.3 How is advice produced?

Formally, 'STECF' refers to the advice-giving STECF committee that provides scientific opinions to the commission, which are generally adopted at STECF plenary meetings⁶⁴. In some cases, those scientific opinions are derived from technical and analytical work carried out by the committee itself, but in many cases the STECF will convene an expert working group that is given time to carry out technical analysis and compile an evidence report from which the STECF plenary can offer advice⁶⁵. These expert working groups are mandated to "undertake tasks which are clearly defined and directly linked to the requests submitted by the Commission."⁶⁶ As one of the STECF contributors explained:

"the committee is the STECF and is the advice giving body but some of the information required is so hungry in terms of data requirements, in terms of the amounts of material that have to be collated from all the different Member States in order to provide that advice, that the time available in the sort of three [STECF] plenaries that are held each year, is insufficient. So the way they handle that is have a series of expert groups which pulls in additional people, they're not mutually exclusive, some STECF members are encouraged to participate in the working groups but there's a bigger body of people who essentially do the number crunching or consider the detail, and try and produce a report which is then helpful to STECF to complete the task efficiently."⁶⁷

⁶⁰ EU Commission (2019): Scientific advice on managing fish stocks. Retrieved from: https://ec.europa.eu/fisheries/cfp/fishing_rules/scientific_advice

⁶¹ EU Commission (2019): About STECF. Retrieved from: <https://stecf.jrc.ec.europa.eu/about-stecf>

⁶² STECF Interview 2, February 2019

⁶³ STECF Field Notes, October 2018

⁶⁴ EU Commission (2019): STECF Rules of Procedure. Retrieved from: https://stecf.jrc.ec.europa.eu/c/document_library/get_file?uuid=8822fd78-07ea-407a-80b3-00146359b6c7&groupId=43805

⁶⁵ EU Commission (2019): STECF Rules of Procedure. Retrieved from: https://stecf.jrc.ec.europa.eu/c/document_library/get_file?uuid=8822fd78-07ea-407a-80b3-00146359b6c7&groupId=43805

⁶⁶ Ibid.

⁶⁷ STECF Interview 2, February 2019

The STECF plenary generally meets three times per year and there are up to around 20 expert working group meetings in support of these⁶⁸. Meetings typically last for 3-7 days⁶⁹. Both the STECF Plenary and the expert working groups are encouraged to reach consensus positions, but have the provision to include minority opinions in their reports⁷⁰. In some cases, the STECF will collaborate or consult other bodies in shaping its advice. As its rules note:

*"Where necessary, the STECF shall co-operate with other relevant scientific and advisory bodies in undertaking its work and in preparing its opinions and advice. Such activities shall be coordinated by the Secretariat."*⁷¹

4.1.4 How are requests for advice developed?

The Commission is the only body able to request advice from the STECF⁷². Requests for advice are issued through 'Terms of Reference'. The STECF rules note:

*"Terms of reference to the STECF shall include a list of requests for advice together with background information and relevant supporting documentation to enable the STECF to provide an informed response. The terms of reference shall be submitted to the STECF via the Secretariat."*⁷³

The Terms of Reference are issued to the STECF, and the STECF can ask for clarification from the Commission and for any additional supporting information⁷⁴. The interpretation of the Terms of Reference also develops through informal dialogue between STECF experts and members of the Commission, who are able to attend any STECF meetings of their interest⁷⁵. Members of the Commission are able to attend expert working group meetings and offer further guidance on the Terms of Reference. As one of the STECF contributors explained:

*"The way that we try to arrange it is that people [from the Commission] who are responsible for a particular item on the agenda are at least there at the beginning of the meeting to clear up any misunderstanding of what's actually been requested. I would say, again this is off the top of my head, but I would say that 60-70% of the time, those people are there, maybe 20-30% of the time, they're unable to turn up. The desire for those people to be at the proceedings is simply to just clear up any misunderstandings and to make sure that at the drafting stage, we actually didn't lose the plot on the way and that we're not trying to provide something that they didn't really want."*⁷⁶

The Terms of Reference set the scope for the advice provided by the STECF, and also ensure that the expert working groups carry out the appropriate technical work that allows the STECF Plenary to issue appropriate advice. As one of the STECF contributors explained:

⁶⁸ EU Commission (2019): STECF Meetings. Retrieved from: <https://stecf.jrc.ec.europa.eu/meetings>

⁶⁹ Ibid.

⁷⁰ EU Commission (2019): STECF Rules of Procedure. Retrieved from: https://stecf.jrc.ec.europa.eu/c/document_library/get_file?uuid=8822fd78-07ea-407a-80b3-00146359b6c7&groupId=43805

⁷¹ Ibid.

⁷² EU Commission (2019): STECF Rules of Procedure. Retrieved from: https://stecf.jrc.ec.europa.eu/c/document_library/get_file?uuid=8822fd78-07ea-407a-80b3-00146359b6c7&groupId=43805

⁷³ Ibid.

⁷⁴ Ibid.

⁷⁵ EU Commission (2019): About STECF. Retrieved from: <https://stecf.jrc.ec.europa.eu/about-stecf>

⁷⁶ STECF Interview 1, October 2018

"Generally, the working groups don't have time to go too far off track and do things of their own but if they do, the plenary is really quite ruthless, it will say, "that section is all very interesting but it's nothing to do with what we've been asked to do" and it will be completely ignored in its answering of the questions. It [the STECF plenary] will still have the same terms of reference that the working group had, sometimes they're modified slightly by the Commission because a new issue has come up and they're asked politely, "Could you have a look at this as well?" but generally the terms of reference follow through into the plenary and the plenary then prepares a much shorter, pithy advice, based around what the working group has said and so if there's any extraneous material or stuff that's not relevant, it's completely ignored...So the plenary tries to be even-handed and make use of what is definitely relevant to answer in the question and does have the, it doesn't have to be so tied to the terms of reference that it can't raise a pertinent issue that the Commission really ought to pay attention to, and so sometimes it does."⁷⁷

In describing what the advice from the STECF looks like, one of its participants explained: "STECF doesn't say to the Commission, "you should do this", it just says, "Given this question, given this information and indeed any other information that we have on the topic, this would be our best advice."⁷⁸

In some cases, the science advice mechanisms of the EU are directly responding to international relations issues with regards to requests from EU Member States about their implementation of the CFP. As one of the STECF participants explained:

"the Member States themselves responding to the various policies and measures that are introduced, proposed by the Commission but usually or often agreed by the Council of Ministers and then more recently, by joint decision between the Council of Ministers and the parliament, the Member States fire in questions to the Commission about, "We would like to do this, could we modify the policy or the rule in order to do this?" [...] The Commission then has to respond to that and often in those cases, the lead-in time, the response time is of a very short nature and sometimes, it's not quite so bad nowadays but in the past, in response to some of the TAC and quota outcomes, which there are proposals for those usually in the late summer of the year, by the November, STECF plenary, there were often questions which said, "We would like to do something different here, we think we need you to look at this advice that came from ICES again, we don't think it's quite right, could we have a slightly higher mortality rate?" and in that case, STECF has to respond to that in very short order, usually then in the space of a week, to give the Commission new advice or updated advice or to uphold the original advice, in order that they can then provide the basis for the discussions in the Council of Ministers..."⁷⁹

4.1.5 What administrative support is provided?

The STECF is supported by a secretariat provided by the Commission administered by the Joint Research Centre (JRC)⁸⁰. The JRC has provided the secretariat for the STECF since 2005, and its role is to provide facilitation services for the activities of STECF, which includes data dissemination and storage, and organising expert group processes.

⁷⁷ STECF Interview 2, February 2019

⁷⁸ STECF Interview 2, February 2019

⁷⁹ STECF Interview 2, February 2019

⁸⁰ EU Commission (2019): About STECF. Retrieved from: <https://stecf.jrc.ec.europa.eu/about-stecf>

4.2 Example Two: International Council for the Exploration of the Sea

The International Council for the Exploration of the Sea (ICES) is an intergovernmental membership organisation founded in 1902. Indeed, it claims to be the oldest intergovernmental science organization in the world. The goal of ICES⁸¹ is:

"to advance and share scientific understanding of marine ecosystems and the services they provide and to use this knowledge to generate state-of-the-art advice for meeting conservation, management, and sustainability goals."

ICES provides advice to the EU, other national governments, and private sector and civil society organisations. The work of ICES involves around 1,500 scientists per year, and derives the majority of these from its 20 member countries⁸². ICES has a dual part structure for its work, including committees dedicated to the science of fisheries and those more explicitly dedicated to science advice related to fisheries. The focus of this report is on the science advice component of ICES.

4.2.1 What is the mandate?

The mandate for the provision of science advice to the EU with regards to fisheries is governed by a Memorandum of Understanding (MoU) agreed each year with the EU Commission. In 2019, the MoU⁸³ related to the recurrent advice on single fish stocks, mixed fisheries, fisheries and ecosystems, and other related advice, as well as additional non-recurrent advice as agreed between the parties. Given that ICES is a membership organization that provides advice on commission, the MoU agreed a payment from the EU Commission of €1.9 million for the year 2019.

4.2.2 Who are the experts?

The advice from ICES is prepared in an advice drafting group and approved by the Advisory Committee (ACOM). In explaining the composition of these expert groups, a representative from ICES explained:

*"it's designed the way that all member countries have delegates that can assign experts, national experts to the groups, and all our groups are open to all our ICES member countries, so a delegate can assign any expert to any group in the ICES community, so we really try to open that way."*⁸⁴

Another contributor to ICES added:

*"once you're in ICES as a member country, you nominate scientists to the processes, so the member state has control of who is there for the different groups that are set up. They have an advisory committee, ACOM, again with nominations from the member state as to who they want to sit on that overarching body."*⁸⁵

⁸¹ ICES (2019): About ICES. Retrieved from: <https://www.ices.dk/explore-us/who-we-are/Pages/Who-we-are.aspx>

⁸² Ibid.

⁸³ EU Commission (2019): Specific Agreement number S12.801046. Retrieved from: https://www.ices.dk/explore-us/Documents/Cooperation%20agreements/EU/20190308_EC_DGMARE_ref%20G.16.f_Specific%20Grant%20Agreement_Signed_PUBLIC.pdf

⁸⁴ ICES Interview 2, January 2019

⁸⁵ STECF Interview 2, February 2019

However, ICES doesn't only seek participation from the countries in the regions in which the fish stocks that are being assessed are from. As a representative from ICES explained:

*"The Advice Drafting Groups are composed of Advisory Committee (ACOM) members, and there we are trying to facilitate that you have a good mixture of ACOM members familiar with the region, but also ACOM members completely removed from that region, so our US and Canada ACOM members are quite busy when they're looking at the single stock advice for instance because they are our external ACOM members for these processes"*⁸⁶

4.2.3 How is advice produced?

ICES produces advice in response to requests for advice from members that are defined in MoUs and other special requests⁸⁷. This means that it operates on a client-contractor basis, where members request and pay for advice either on a recurrent or ad-hoc basis⁸⁸. As a contributor to ICES commented:

*"member countries of ICES can ask ICES to do additional questions and work, for which ICES will essentially say, "Here's an estimate of how much that's going to cost you" and they can bill them for it."*⁸⁹

The MoU between ICES and the EU Commission sets out some expectations for the production of advice in stating that:

"ICES will provide advisory deliverables which are independent of political influence and subject to best international quality procedures for research and research-based advisory deliverables. The technical basis for the advisory deliverables and the process through which it is produced will be transparent. The quality of the technical basis will be ensured through internal and external peer review."

The structure of the advice production process is defined by ICES⁹⁰ to follow the following steps:

- "A request for advice is received from a client
- Data are collected by expert groups, which then make assessments and draft a first scientific/technical response to the request
- Expert group reports are peer-reviewed by independent experts
- In cases of stock assessments where the benchmark (established assessment method to be used) has been agreed upon, the reviewing is carried out within the expert group and then followed by an advice drafting group
- The expert group report together with the review is used in the advice drafting group
- Draft advice prepared by the advice drafting group is discussed and finally approved by the Advisory Committee (ACOM)
- The advice is delivered to the client."

⁸⁶ ICES Interview 2, January 2019

⁸⁷ ICES (2019): ICES Cooperation Agreements. Retrieved from: <http://www.ices.dk/explore-us/how-we-work/Pages/Cooperation-agreements.aspx>

⁸⁸ ICES (2019): Introduction to advice. Retrieved from: http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/Introduction_to_advice_2018.pdf

⁸⁹ STECF Interview 2, February 2019

⁹⁰ ICES (2019): ICES Advisory Process. Retrieved from: <http://www.ices.dk/community/advisory-process/Pages/default.aspx>

4.2.4 How are requests for advice developed?

Much of the advice provided by ICES is recurrent advice about fish stocks, fisheries and ecosystems that has an agreed scope based on requests for advice from members that are defined in MoUs and other special requests⁹¹. A representative from ICES explained:

"The overall agreement between us and the clients and the framework is more or less stable, but the particular bits like, on an annual basis it can vary for instance which stocks the clients want to have advice for, or whether they would like to have a bi-annual advice for some of the stocks and not for others, so every year, in particular for the EU, we have to revise that list of stocks and what type of advice they would like to have. There are of course linkages, so all the shared stocks, all the clients need to agree upon how they want the advice to be delivered, so if you for instance have a stock where there's an agreed management plan, has been evaluated as being precautionary, then that's what we're using for basis of the advice. But if you have a stock where one of the clients hasn't agreed to that management plan, then we provide advice on the basis of the [Maximum Sustainable Yield (MSY)] approach, and then of course we can provide a catch scenario using that management plan [for that particular client], but the main advice will be the ICES MSY approach if it's a category one stock."⁹²

This means that ICES experts contribute to the framing of the questions that are being put to them for advice. As a representative for ICES explained:

"usually we're quite involved in management plan evaluations of course, and we do interact quite a bit with the clients on this [...] to provide the scientific basis for what harvest control could look like, what questions would be useful to know scientifically, so that they're not asking us to evaluate plans that are completely bonkers, and we're helping them formulating the requests for advice so that it's actually something we can evaluate scientifically. [...] There are lots of shared stocks, and mostly the clients have settled in good time what they would like us to do, and every year I send out a list of the known management plans that we're aware of and ask whether or not these are still valid, if they have agreed them, because of course I don't know everything, and then they have to respond back, and if there are management plans then that have been terminated or that they do not agree upon anymore, then they're taken off the list and we're not using them as basis for the advice."⁹³

Even once the advice is requested, there is an ongoing dialogue to ensure that the experts know what is being asked of them and carries out the advice in accordance with the needs of the client. As a representative for ICES explained:

"for the single stock advice there's not much back and forth, everybody knows what to do, that's cranking the tape machine, but very often when we get special requests, what we do is that once ACOM has decided that it's fine to start working on the requests we get in touch with the relevant experts and Expert Working Groups and ask them to read through the requests, and if there are any unclear issues to get back to us, and they usually do, and then we go back to the clients and say, "We need to have a specification of what criteria you would like us to use", or, "The criteria's you have proposed aren't valid, we can't use them, but we suggest this and this instead", and then the clients have

⁹¹ ICES (2019): ICES Cooperation Agreements. Retrieved from: <http://www.ices.dk/explore-us/how-we-work/Pages/Cooperation-agreements.aspx>

⁹² ICES Interview 2, January 2019

⁹³ ICES Interview 2, January 2019

*a think and then they come back to us and then we settle, so we have a common understanding of what's being asked for.*⁹⁴

4.2.5 What administrative support is provided?

As a permanent structure, ICES has a relatively large established secretariat based in Copenhagen, Denmark.⁹⁵ The secretariat is responsible for secretarial, administrative, scientific, and data handling support for the ICES community.

4.3 Example Three: The Scientific Advice Mechanism

The Scientific Advice Mechanism (SAM) was formalised in 2015 through a decision that stated:

*"High quality scientific advice, provided at the right time, greatly improves the quality of EU legislation and therefore contributes directly to the better regulation agenda"*⁹⁶.

The SAM was established with two components. The first included a panel of senior science advisors that could be directly consulted by the EU Commission called the Group of Chief Scientific Advisors (the GCSA), formerly known as the High Level Group of Scientific Advisors⁹⁷. The GCSA was complemented by the funding of a parallel organisation that brought in the scientific communities through a collection of European Academies called Science Advice for Policy by European Academies (SAPEA), which was funded as a Horizon 2020 project to carry out evidence synthesis activities as part of the Science Advisory Mechanism.

4.3.1 What is the mandate?

The mandate of the SAM is:

*"to provide high quality and independent scientific advice to the European Commission on matters of importance to Commission policy making, in as transparent and unbiased a manner as possible."*⁹⁸

The work of the SAM is defined in a set of documents, including a Rules of Procedure and a set of Guidelines on how the SAM produces scientific advice⁹⁹.

SAPEA was established in November 2016 and funded by a grant from the European Union's Horizon 2020 programme¹⁰⁰.

⁹⁴ ICES Interview 2, January 2019

⁹⁵ ICES (2019): ICES Secretariat. Retrieved from: <https://www.ices.dk/explore-us/who-we-are/Pages/Secretariat.aspx>

⁹⁶ European Commission (2015): Commission Decision on the setting up of the High Level Group of Scientific Advisors. Retrieved from: http://ec.europa.eu/research/sam/pdf/c_2015_6946_f1_commission_decision_en_827417.pdf

⁹⁷ European Council (2015): EC Decision C(2015) 6946. Retrieved from: https://ec.europa.eu/research/sam/pdf/c_2015_6946_f1_commission_decision_en_827417.pdf ; amended in EC Decision C(2018) 1919. Retrieved from: https://ec.europa.eu/research/sam/pdf/c_2018_1919_f1_commission_decision_en_v4_p1_970017.pdf

⁹⁸ European Commission (2019): Scientific Advice Mechanism: From questions to answers. Retrieved from: https://ec.europa.eu/research/sam/pdf/guidelines_how_samProducesScientificAdvice.pdf

⁹⁹ European Commission (2019): Group of Chief Scientific Advisors. Retrieved from: <https://ec.europa.eu/research/sam/index.cfm?pg=hlq>

¹⁰⁰ SAPEA (2019): About SAPEA. Retrieved from: <https://www.sapea.info/about-us/>

4.3.2 Who are the experts?

The GCSA has up to seven members that derive from different disciplines and countries of the EU¹⁰¹.

Encompassing expertise from engineering, humanities, medicine, natural sciences and social sciences, SAPEA provides an organisation that can bring together contributors from national academies and learned societies throughout Europe in the production of advice.

*"In selecting experts for workshops, SAPEA pays due attention to diversity (of scientific views, geographical balance, gender balance, as well as including young scientists)."*¹⁰²

In contrast to the GCSA, which have standing contracts to provide ongoing advice throughout their terms, the experts of SAPEA are brought together on a task-specific basis to write reports.

4.3.3 How is advice produced?

The *Food from the Oceans* report provides an illustrative example of the kind of work carried out by the GCSA and SAPEA. This was one of the first evidence review reports of SAPEA, which was published on the 29th of November 2017¹⁰³, and followed up by a subsequent Scientific Opinion from the GCSA¹⁰⁴. The *Food from the Oceans* evidence review was produced in response to a request from Karmenu Vella¹⁰⁵, the Commissioner for Environment, Maritime Affairs and Fisheries, for a scientific opinion on the question:

*"How can more food and biomass be obtained from the oceans in a way that does not deprive future generations of their benefits?"*¹⁰⁶

The scope of the report was defined by a scoping paper that was jointly agreed between the commission and the group of chief scientists at a meeting on 24-25 November 2016¹⁰⁷.

The GCSA provides scientific advice to the College of European Commissioners¹⁰⁸. A description of the group on its website notes that:

"The Group is unique in its dialogue with, and provision of advice directly to, the College; the Group also works with other science advice structures supporting decision-making within the EC such as the Joint Research Centre (JRC); the various decentralised agencies of the Commission; and the Scientific Committees, etc. This cooperation and coordination enables expertise to be shared and overlap to be avoided."

¹⁰¹ European Commission (2019): Group of Chief Scientific Advisors. Retrieved from: <https://ec.europa.eu/research/sam/index.cfm?pg=hlg>

¹⁰² European Commission (2019): Scientific Advice Mechanism: From questions to answers. Retrieved from: https://ec.europa.eu/research/sam/pdf/guidelines_how_sam_produces_scientific_advice.pdf

¹⁰³ SAPEA (2017): Food from the Oceans Evidence Review. Retrieved from: <https://www.sapea.info/wp-content/uploads/FFOFINALREPORT.pdf>

¹⁰⁴ European Commission (2017): Food from the Oceans Report. Retrieved from: http://ec.europa.eu/research/sam/pdf/sam_food-from-oceans_report.pdf

¹⁰⁵ European Commission (2017): Food from the Oceans: Scientific advice in the area of food and biomass from the oceans. Retrieved from: <https://ec.europa.eu/research/sam/index.cfm?pg=oceanfood>

¹⁰⁶ European Commission (2016): Scoping paper: Food from the Oceans Report. Retrieved from: https://ec.europa.eu/research/sam/pdf/meetings/hlg_sam_052016_scoping_paper_oceanfood.pdf

¹⁰⁷ European Commission (2017): Food from the Oceans: Scientific advice in the area of food and biomass from the oceans. Retrieved from: <https://ec.europa.eu/research/sam/index.cfm?pg=oceanfood>

¹⁰⁸ European Commission (2019): Group of Chief Scientific Advisors. Retrieved from: <https://ec.europa.eu/research/sam/index.cfm?pg=hlg>

The production of scientific advice by the GCSA is underpinned by “the principles of excellence, transparency and independence”¹⁰⁹. A member of the GCSA emphasised that their advice was ‘authoritative’ because:

“it constitutes a recommendation from the Commission’s group of Chief Scientific Advisors”¹¹⁰.

In other words, the appointment of the GCSA by the Commission gives it a level of authority that unsolicited advice may not have. The advice is developed in a scientific opinion for which the Group seeks to produce a consensus position, although there is provision for dissenting opinions to be noted in the reports¹¹¹.

The evidentiary basis for the GCSA scientific opinion is often derived largely from the work of SAPEA. As someone from SAPEA explained:

“I think they realised that one person can’t cover all of this work that’s needed, and that’s when they put the group of chief scientific advisers, which is now seven, pretty high-level scientists with policy experience, but they even don’t know every science.”¹¹²

SAPEA describes itself as providing “timely, independent and evidence-based scientific expertise for the highest policy level in Europe and for the wider public.”¹¹³ The function of SAPEA differs from that of the GCSA. As a statement on the SAM website notes:

“SAPEA produces Evidence Review Reports (ERR) following methods developed with SAM to ensure the highest quality standard in order to minimise bias, improve efficiency and ensure transparency. SAPEA ERRs may, in addition to the review of the evidence, identify policy options.”

The distinction between the two organisations is therefore very important. SAPEA only provides evidence synthesis and a set of options – it explicitly does not make recommendations. As one of its representatives commented:

“In science advice for policy, SAPEA doesn’t write recommendations, we give options based on the science, we make sense of the science and if there’s options for policy, that’s what we deliver. The recommendations come from the Group”¹¹⁴.

The procedure for evidence synthesis are set out in the Guidelines¹¹⁵. As a representative explained:

“there’s procedures to ensure that there isn’t bias, that we have an even spread of scientists from across Europe, that we train them, we brief them on and how to be balanced in reporting the science, that they’re not driving their own ‘save the environment’ or ‘kill the environment’ agenda, that they report on what the science says and this, as much as possible, honest broker method.”¹¹⁶

¹⁰⁹ European Commission (2018): Group of Chief Scientific Advisors in the European Commission’s Scientific Advice Mechanism. Retrieved from:

https://ec.europa.eu/research/sam/pdf/sam_general_citizen_summary_072018.pdf

¹¹⁰ GCSA Interview, February 2019

¹¹¹ European Commission (2019): Scientific Advice Mechanism: From questions to answers. Retrieved from: https://ec.europa.eu/research/sam/pdf/guidelines_how_sam_produces_scientific_advice.pdf

¹¹² SAPEA Interview, October 2018

¹¹³ SAPEA (2019): About SAPEA. Retrieved from: <https://www.sapea.info/about-us/>

¹¹⁴ SAPEA Interview, October 2018

¹¹⁵ European Commission (2019): Scientific Advice Mechanism: From questions to answers. Retrieved from: https://ec.europa.eu/research/sam/pdf/guidelines_how_sam_produces_scientific_advice.pdf

¹¹⁶ SAPEA Interview, October 2018

SAPEA reports typically take around one year to produce, and might involve around 20 experts from across the EU. Although the SAPEA evidence review reports can take around a year, there is some provision for slightly faster turn-around scientific advice. As a representative from SAPEA said:

"there is a rapid response mechanism built into the grant which it hasn't been really developed, which means we host a workshop or we just use a network report, [...] or [a report from] the other academies. On our website you can find all the different reports and if they needed advice urgently on something, we can look in this database and just send that, or sometimes they'll have a brainstorm learning meeting and they'll want an expert, so we'll look in the academies for a fellow who's an expert on epidemiology or an expert on how plastic influences health or something, and then we can send that, and that's kind of a quick sort of response, but that's still being developed. We're not like the Red Cross where we can work two weeks, 24 hours a day to put together a report quickly on desert winds or Ebola or something, we don't work like that just yet."¹¹⁷

Both the GCSA and SAPEA involve broader groups of stakeholders in the final review of the evidence reviews and scientific opinions. As an example, in the production of one of the early outputs of SAPEA and the GCSA on *Food from the Oceans*, effort was made to involve a broader set of stakeholders in the drafting of the Scientific Opinion. In advance of the finalisation of this report, a stakeholder meeting was run on the 13th of November 2017 involving interest groups and other policy actors¹¹⁸, and a broader expert meeting was held with the Group of Scientific Advisors, members of the SAPEA, other experts from industry, civil society, specialised agencies and observers from the EU Commission¹¹⁹. While typically the science advice bodies of the EU remain independent of one another, there was some cross-over between the different science advice bodies in the production of the *Food from the Oceans* report. On the 17th of November 2017, the Policy Officer of the SAM, James Gavigan, presented the latest draft of the Scientific Opinion on *Food from the Oceans* to the Scientific, Technical and Economic Committee for Fisheries (STECF).

4.3.4 How are requests for advice developed?

Requests for advice from the GCSA are either made by the College of Commissioners for work in a particular area, or the GCSA can propose an area of work to the College¹²⁰. The Guidelines for the scientific advice state:

"requests should address specific issues where such advice is critical to the development of EU policies or legislation and does not duplicate advice being provided by existing bodies."¹²¹

The developing of the scoping paper, including the question to be answered, was described by one of the GCSA as 'co-produced'. They explained that this is:

¹¹⁷ SAPEA Interview, October 2018

¹¹⁸ European Commission (2017): Food from the Ocean Stakeholder Meeting Report. Retrieved from: https://ec.europa.eu/research/sam/pdf/meetings/ffo_stakeholder_meeting.pdf

¹¹⁹ European Commission (2017): Food from the Ocean Expert Workshop Report. Retrieved from: https://ec.europa.eu/research/sam/pdf/food_from_oceans_expert_workshop_report.pdf

¹²⁰ European Commission (2019): Scientific Advice Mechanism: From questions to answers. Retrieved from: https://ec.europa.eu/research/sam/pdf/guidelines_how_samProduces_scientific_advice.pdf

¹²¹ Ibid

*"to both assure that the scoping paper - in particular the main research question for it - targets a researchable scientific problem and that advice developed on this basis will be usable and relevant as advice to multiple bodies is the rule."*¹²²

The topical focus of the work of SAPEA is determined by requests from the EU Commission. The precise work requested is set out in a mutually agreed scoping paper that:

*"develops the reasoning for the request, describes the main issues at stake, the EU policy context, the requirements for evidence, frames the questions to be answered by the Advisors and indicates the date by when the product is to be delivered."*¹²³

Even before the scope of evidence review is defined there are conversations about what is needed. As a representative from SAPEA said:

*"there's lots of meetings that happen to scope topics that never go anywhere, there's a couple of topics that didn't happen, just lots of informal chats about, "Should we do science advise, is there a need, is there an appetite, is it needed?" And then we'd meet with DG CLIMA or we'd meet with whoever the audience and say, "What do you need?" And they might say, "Actually, in two or three years we might need it, but maybe not right now," because of something that's in the pipeline, so that happens all the time."*¹²⁴

About the demand for the report, a representative from SAPEA commented:

*"You don't want to write a report and have it sit in a draw covered in dust, what's the point in that? So there's generally an appetite for the work we do, that's why we're doing it, that's why there's certain timely adhoc topics that come up. The JRC served the Commission with a lot of advice for policy and the housekeeping, lots and lots of, they're really good and they're a huge institution. But sometimes there's a special topic that there's an added value from this different approach, this European wide academy type project and it's usually some sort of unusual topic that we can pick up and run with."*¹²⁵

In carrying out this work, the SAPEA and the GCSA are provided with administrative support.

4.3.5 What administrative support is provided?

The Group has administrative support in the form of a secretariat in the EU Commission Directorate General (DG) for Research and Innovation¹²⁶. SAPEA has a coordination team administered by acatech, the National Academy of Science and Engineering, Germany¹²⁷.

¹²² GCSA Interview, February 2019

¹²³ European Commission (2019): Scientific Advice Mechanism: From questions to answers. Retrieved from: https://ec.europa.eu/research/sam/pdf/quidelines_how_sam_produces_scientific_advice.pdf

¹²⁴ SAPEA Interview, October 2018

¹²⁵ SAPEA Interview, October 2018

¹²⁶ European Commission (2018): Group of Chief Scientific Advisors in the European Commission's Scientific Advice Mechanism. Retrieved from: https://ec.europa.eu/research/sam/pdf/sam_general_citizen_summary_072018.pdf

¹²⁷ SAPEA (2019): SAPEA Team. Retrieved from: <https://www.sapea.info/about-us/team/>

4.4 Comparing between cases

In seeking to understand how the different science advice bodies differ and interact, interviewees from the different bodies were asked about and commented on the distinct roles played by ICES, STECF and the SAM.

Speaking on the distinction between ICES and the STECF, an expert contributor to STECG explained:

"The simple distinction for me is that ICES is an organisation and STCEF is an advisory committee of independent people and it's simply brought together to do a particular job, whereas ICES has a set of standing committees, if you like, and an annual programme to provide certain things, certain types of advice, TAC advice for example, whereas STCEF can be asked to do anything and on almost any timescale. But the main distinction for me is STCEF isn't an organisation, but a lot of people treat it as though it is, it's an ephemeral group of people who get together three times a year and talk to each other a bit in between, that's how I see it anyway. [...] ICES is an organisation that serves a lot more purposes than giving advice to DG MARE, essentially STCEF is just the advisory committee for DG MARE. The thinking a while ago, and I'm not sure it's the same, maybe it is, was that ICES is giving advice to a recipe, whereas STCEF, the recipe might not be quite so obvious.

The other thing was that ICES is advising, the main thing ICES does for the Commission is to do the assessments and give the catch options, so it's providing options for catches in accordance with management objectives, which at the moment is [Maximum Sustainable Yield] (MSY). What STCEF in principle should be doing, it should be giving management advice, taking into account other things other than the catch options. So it's an advisory body but it should be advising on management rather than just on catch options, it just so happens that the main management tool that people have got in, certainly in the North Atlantic, in the ICES area are [Total Allowable Catch](TACs), but STCEF is asked to do a lot of other things that ICES isn't asked to look at, like management plans, doing simulations and management strategy evaluations. ICES does it as well but normally the things that are, not normally, quite a lot of the requests that are ancillary to catch options come to STCEF and some of them go to ICES."¹²⁸

Another contributor to the STECF understood the distinction with ICES in different terms. They suggested that the kind of science advice that STECF offers can be thought about in relation to its proximity to the policy process. It provides scientific opinions on issues that are often pressing and management actions that need to be informed. As they explained:

"I would say generally, it is science which is closer to policy in that it has to deal with the immediacy and things and being light footed and responsive to questions that emerge, trying to be helpful and constructive in a short space of time, so yes, I would argue that it is quite close and has to be in a sense, slightly more mindful of that role."¹²⁹

Another interviewee talked about the kind of knowledge and the disciplinary range of the different science advice bodies:

"it is quite fascinating because what's the difference between ICES' working groups and STECF is that STECF is actually including economic information, more social information in the advice, and the funny thing is that for many cases, perhaps specifically like with Danish and Dutch cases or German cases,

¹²⁸ STECF Interview 1, October 2018

¹²⁹ STECF Interview 2, February 2019

you have people who are in the ICES working group running the assessment and then are in the same STECF working group, the same people talking about the same thing but with different hats on...but it's because the Commission wants to have their own group doing their own thing and ICES is ICES, but STECF, then we have more autonomy and we can do different types of analysis, we can include different types of data. From a public perspective, it looks extremely redundant but it has its political features."¹³⁰

This was reinforced by another interviewee, who commented:

"There's a big difference in that we do not deal with economics that much in ICES, that's more STECF that is dealing with that. I think we have a broader community given that we also have the States and Canada involved in our Expert Groups, and we have both the advisory part but certainly also the science part, and the interface between all the Science Groups that are really just doing scientific work, they're not doing advice, they're making the science that is the basis for what we do in advice. That interaction between the Science Groups and the Advice Groups I think is unique, because you're carrying over more longer-term research into what we are providing as day to day advice, so in that sense I think if you compare us to STECF that we have a lot more science input to our advisory work in that way, plus we have a broader community because it's not just EU countries."¹³¹

When the work of the SAM, and in particular the reports on *Food from the Oceans* were considered, a representative from ICES commented:

"I would definitely see this report not with an ICES lens at all but more perhaps of a type of UN/academic lens. That is my reading of it."¹³²

In thinking about the distinction between ICES and the work of the SAM, another commented:

"the way that ICES is organised and the way that we're operating, having the data development stuff and science development and our advice development running throughout many years I think is quite different than from having a, and I don't mean to sound snobbish or anything, but like a one off project doing this [as seen in the SAM work on Food from the Oceans], and not having that wide based peer reviewing that we do of our work here. [...] I don't think it's alarmingly wrong or horrible what they've done, what I think is lacking is first of all when you're dealing with project you're not having that kind of set mechanism for peer review and transparency and all those things that I think is the virtues of ICES, you're not really sure what exactly are the objectives behind what's being done, and I think if I was a manager I would probably look into, "Okay, what are the incentives to providing this piece of advice, what's behind it, has it been peer reviewed, can I see through that whole process?"¹³³

Representative from the STECF also expressed concern about the production of the *Food from the Oceans* report. The report was presented to the STECF plenary meeting, which offered the response:

"STECF has not had the opportunity to consult the SAPEA evidence review report, on which the recommendations of the HLG are based. In addition, the

¹³⁰ ICES Interview 1, January 2019

¹³¹ ICES Interview 2, January 2019

¹³² ICES Interview 1, January 2019

¹³³ ICES Interview 2, January 2019

Committee was not permitted to retain a copy of the presentation, which limited the opportunity for any in-depth discussion on which to base constructive, informed feedback. STECF welcomes the initiative to have had this report presented during plenary. However, it is regrettable that the STECF was not consulted to provide input to the FFO initiative at an earlier stage in the process, for example to provide feedback on the SAPEA evidence review report before the HLG recommendations were formulated based on the evidence in that report.”

In contrast, a representative from the SAM explained their view:

“To my mind, in particular very broad and wide-ranging areas are highly suitable to the GCSA given that it builds on evidence gathered and assessed amongst the networks of European academies, and that the SAM and GCSA are themselves not focused on any one discipline or sub-area, or restricted to any one Commission activity. This makes it possible for the SAM mechanism to transcend existing Commission areas, such as in Food from the Oceans recommending mainstreaming food systems considerations. This is a focus of advice that might not have been placed in focus if the advice had been restricted to providing advice only within any one specific Commission or administration area, but that is resultant of the broad scope of the opinion in relation to the broad question set in the scoping paper.”¹³⁴

These divergent reflections raise the issue of specialism over breadth, which are expanded upon in the discussion below on de-facto governance practices.

¹³⁴ GCSA Interview, February 2019

5. De-facto governance practices

5.1 Issues and discussions

In the analysis of science advice structures in the EU, there is a number of important issues and discussions that can be highlighted. The two that are discussed in this report are about the communities of practice that participate in the science advice system in the EU, and the second is the recognized role of science as part of the negotiation for fisheries, but not the source of the answers.

5.1.1 Communities of practice

First, the question of who participates in these science advice is reflected in the question 'who are the experts?' in the three example study science advice bodies above. Each of the three structures is dedicated to including diverse representation of experts both from different national settings, but also from a wide range of disciplinary perspectives. Asked about this diversity, interviewees commented about the importance of country and disciplinary representation as contributing to the credibility of the institution by ensuring that knowledge from different parts of the EU could be included, but also that the science advice bodies are seen as authoritative from the different Member States. As a representative from SAPEA commented:

"it's supposed to represent Europe, it's policy advice for Europe and so we want it to be relevant"¹³⁵.

Many of the science advice bodies see their role as not only providing evidentiary input into the policy process, but also contributing to the scientific capacity of EU researchers. As a representative from SAPEA commented:

"It's one of our objectives specifically, interestingly in the grant, it's not just to give the policy advice to the Commission, but also to improve connections between academies and the academies and their networks and between the networks and the Commission, so to try and develop a more kind of European collaboration for policy."¹³⁶

Communities of practice are therefore built through the production of networks between existing organisations that have skills in a particular area. They also support the development of participants in science advice processes to become more skilled and attuned at their role. As a representative from SAPEA commented:

"They also have this geographical spread which is nice, which can, in Europe, reach different countries in both cases. And the case of diplomacy, it's really good for scientists from Eastern Europe for example to come and join one of our working groups and learn from the process, and take what they learn there back and build that locally, as well as the policy advice, which they deliver to their ministries, and in a very centralised hub advise. It's one of the nice features of SAPEA in that we disseminate widely and we try to cover, it's not easy to cover all the countries, southern and eastern as well as this kind of northern, western European countries, which are very strong in research, but we try to do that as much as possible."¹³⁷

¹³⁵ SAPEA Interview, October 2018

¹³⁶ SAPEA Interview, October 2018

¹³⁷ SAPEA Interview, October 2018

This is both considered productive for a strong science advice system, but is also a part of the effectiveness of the operation of these science advice bodies. As a representative from ICES explained:

"I think that one of the most valuable things about ICES and its working groups are that scientific camaraderie and that trust, where you're sharing data but also interpreting it together and coming up with new hypothesis about the data or about the system, that you can go back to your institute and try out. So it's a type of peer review, a lot of these assessment working groups in some ways work as scientific symposia, where people are coming with their data, they're showing it on the screen and saying, "This is how we interpret it" and then other people saying, "That looks good but when we look at that in light of our data, we would take this interpretation" and that type of dialogue would be extremely important to the scientific process..."

I was embedded in a herring assessment working group for a couple of years and people come into the meeting and the first hour is just people hugging, getting coffee and catching up and everybody knows everybody, how are the kids doing, it's extremely tight socially. You're sitting together and some of these assessment groups are 10 days at a time, including weekends, where you don't have to work on Saturdays but still they come in and do the work and all that. So I think that there's a really important role of that, the socio-scientific role of getting people together and then having that critique in a very trustful group."¹³⁸

Another explained:

"it's important to know that, it's a bit of a big family thing, because the clients of course have their scientists that are providing advice to them on what to ask, and ever so often it's the same experts that are going to do the job, so there's an information loop there, if the Norwegians are asking for an evaluation of the Norwegian spring spawning herring management plan, the clients of course have been informed by experts on this stock on what would be sensible to ask ICES to evaluate."¹³⁹

There was a recognition that while the community-building offered by science advice bodies was important, there was a need to open up these processes so that more people participated. As a representative from ICES explained:

"I think one of my main concerns is that the recruitment of scientists into this field, our feeding information and advice to manager is not impressive. I think it's difficult for young scientists and researchers to really see where the rewarding parts of this is because much of what we do when you do work in the ICES system and the advisory system is not particularly producing papers, which is what you mesh it upon, but it's producing advice and engaging with this. And that's what I observe in the wider community of ours, in particular the ones, the experts that are participating in the stock assessment, is that they are mainly driven by a wish and an intent to actually provide salient advice that is operational and can contribute to the preservation of our resources, not so much by the scientific credit they potentially could get from it."¹⁴⁰

A contributor to STECF echoed this concern, and emphasized the way that science advice bodies offered great opportunities to work across different cultures from science, to policy, to industry. As one of the contributors to STECF commented:

¹³⁸ ICES Interview 1, January 2019

¹³⁹ ICES Interview 2, January 2019

¹⁴⁰ ICES Interview 2, January 2019

"There's a general absorption of additional knowledge almost by osmosis, just simply by being here and listening and participating in discussions. I'm not sure, in terms of scientific advancement, actually participating in an advisory committee like this actually does anything for most people, because it's not seen in the academic world as being so scientific, that'll be my feeling. Generally, the people that certainly volunteer to be here, and that's most of them, are doing it because they like this kind of interface between science, policy, and in some cases, industry. It's a fairly rare breed, I think, certainly in the fisheries world, it's hard to get people interested in stock assessment and management advice generally, because it isn't seen as a good way of advancing your scientific career, that's my feeling anyway."¹⁴¹

In this respect, the science advice bodies can be understood as spaces in which communities of practice are established that can navigate different cultures and understand the needs of EU policymaking while also recognizing the scientific constraints. They are also communities that reflect on their own practices and worry about the ongoing recruitment of new members.

5.1.2 Timing of politics

The second issue of relevance across the interviews was the role of science advice as an important input to the political process, coupled with a recognition that the politics had an important part to play. For the most part, science advice was seen as the basis for subsequent political decision making. However, interviewees also noted that politics could precede or intersect with the science advice process. In one example, political agreement on a fisheries policy had happened before the science advice was requested. As one of the contributors to STECF explained:

"the landing obligation which is on the go at the moment, there was huge pressure for that to happen and regardless of lots of warnings from science saying, "You do realise that if you do this, it will mean XYZ, you will have to change this, you'll have to change that", none of which of course Member States were very happy about, would ever be happy about, nevertheless that policy was driven through and supported by the likes of Hugh Fearnley-Whittingstall to great public acclaim, "We've got to stop this", the policy has come in now but chickens are coming home to roost and starting to recognise that it isn't as easy and it might have been better to have been a bit more circumspect and done it in a slightly different way, but that's history now, we're in it, the policy is there and you have to try and manage it. [...S]ometimes the policy driver is so great that regardless of what any of these preliminary consultations, be they with experts in the managerial body or private conversation with other experts, regardless of that, the thing still gets driven through."¹⁴²

In another example, the politics was seen to enter into the science advice process. As a contributor to STECF commented:

"in principle, everyone's working independently and with the best will in the world, people try to work independently but sometimes they have, well, they're lent on, shall we say, by national administrations over particular issues. I don't see that as a problem personally, when I was chairing, I saw it as my job to make sure that everybody else, the committee came to a consensus decision and not be unduly influenced by any particular member, because it's a committee report and not an individual's report. I personally don't see, you're

¹⁴¹ STECF Interview 1, October 2018

¹⁴² STECF Interviewee 2, February 2019

*never going to get away from the fact that people, most of the people are coming from Government departments or something close to a Government department, they're going to be aware of the issues that's worrying that department and they might be persuaded to try and push a particular line, fine, but it's up to the rest of us to spot that and make sure the committee as a whole comes out with an independent consensus opinion."*¹⁴³

The interviewee continued, stating that:

*"one thing I've learned in all my years, is that you should never underestimate the role of extremely strong personalities, in any committee, as being able to influence the route forward. So if you get somebody who's intent on mischief or steering things in a particular way – and they have a particular strong personality – you can potentially have a recipe for trouble ahead and it relies really then on things like strong chairs, but also a collective attitude within any one of the committees, that "we won't tolerate this mucking about, you will get found out and we won't listen so much to that advice", or you'll politely be asked to leave. So generally, the mechanisms I think largely avoid that happening but there is a risk if your finger is in too many pies along the chain."*¹⁴⁴

The next example considers a situation where the politics comes after the science advice process, and the importance for science advisors to recognize the place of this politics. One of the contributors to ICES explained:

*"Once that quota is put on the table, then it's up for negotiations and how to set the actual quota between the countries, between the coastal states of that stock, so EU and Norway, as far as mackerel are known, they get together for two weeks, they're going to go through all their shared stocks and figure out, "Are you going to take 33.3% this year or if we give you some 2% more herring, then we're going to take 4.7% more mackerel" and it's a big negotiation. [...] From a scientific perspective, you tend to see in these high state games, your science taking the back seat to the political negotiations, [...] it's a classic case of them using the ICES advice as the starting rounds for the negotiation, it's not the final word and then they negotiate down, it's not the top level, it's the bottom boundary. That shows that ICES is extremely relevant, you can't do these things, I mean you could do these things without science but nobody can imagine what that would look like, because of the expertise of catching fish and you can really catch every last fish, the seas wouldn't be as productive, so there's a common agreement that we need the science to know, but we can negotiate on top of that science!"*¹⁴⁵

Reflecting on this, the contributor to ICES commented:

*"ICES knows what their role is but they also realise that what happens in the real world when you have to support [the fishing] industry, you have to support jobs and zero catch can mean zero catch scientifically but it doesn't mean that politically."*¹⁴⁶

This example is supplemented by a description of the way in which a scientific opinion provides a broad recognition that due process has been done. As a contributor to STECF explained:

¹⁴³ STECF Interview 1, October 2018

¹⁴⁴ STECF Interview 2, February 2019

¹⁴⁵ ICES Interview 1, January 2019

¹⁴⁶ ICES Interview 1, January 2019

"I think that most Member States recognise that having gone through that process, there is not much more they can do on the sort of process-based science approach through the committee of STECF. That doesn't stop them from still lobbying the Commission during the Council of Ministers and saying, "we recognise that STECF said this but we still believe this" and that's where the whole process of arriving at some sort of an agreement, a deal at the end of the year which the Commission are usually interested in doing, where that enters the murky world of politics and winners and losers and all of that, which STECF have to sit back and say, "We didn't say that but they've still gone ahead and done it". But that's in their gift, managers are managers, it's a good job they do."¹⁴⁷

In a reflection on the art of science advice, Peter Gluckman argues that the recognition of non-linearity of decision-making with competing values, ethics and policies does not deny that science "should hold a privileged place" but that science advice needs to acknowledge the limits of its offering and the uncertainties that exist¹⁴⁸. This chimed with a contributor to ICES, who stated:

"So counting fish is definitely not like counting trees, it is extremely uncertain, highly uncertain even today, even when we have the best sonars and in some schooling stocks, we can actually pick out individuals and we can kind of count them like trees now, that's very specific for schooling species and for demersal species and other mixes species, we can't even dream to do that. So, it's highly uncertain and these fish stocks are moving all over Europe and actually, because of climate change, the distribution is getting bigger and bigger."¹⁴⁹

5.2 Rules and procedures

There are a number of issues related to rules and procedures of the science advice process that are worthy of attention. In particular, the issues of consensus and transparency.

5.2.1 Consensus

All of the science advice bodies are encouraged, and normally do, produce consensus positions on their advice. Although there is provision in each of their rules to include minority positions, this function is not commonly used. Many of the interviewees explained the purpose of consensus as being about providing an authoritative statement that could help the political decision-making process. As a contributor to STECF noted:

"I suppose it always helps for the Commission to be able to say to Member States, that we talked about this, that go on bleating on about an issue after the science, they can then say, "Look, you can see this on Page so and so of this report, this was agreed by the STECF in a consensus" and that's the way forward. So they do draw comfort from having a report in which it appears to have been signed off by 25 or 30 people who've gone to the plenary meeting."¹⁵⁰

Another from ICES explained:

"It [consensus] gives them a much more solid and broad background to say, "Okay, we know that 20 member countries of ICES have reviewed this advice,

¹⁴⁷ STECF Interview 2, February 2019

¹⁴⁸ Gluckman, P. (2014): The art of science advice to government. In: Nature 507, pp. 163-165.

¹⁴⁹ ICES Interview 1, January 2019

¹⁵⁰ STECF Interview 2, February 2019

are agreeing with this advice”, so it’s not just Denmark advising on an enormous sand eel catch for instance, because it gives it more credibility that you have the wide Advisory Committee behind any piece of advice that comes out.”¹⁵¹

However, despite recognizing the importance of consensus, interviewees also emphasized the importance of showing the deliberation of different options in the evidence reviews and advice reports so that the various options discussed were put on record, even if they were then not selected as part of the advice. As a contributor to ICES commented:

“I think consensus, it’s important but it should not be at the expense of deliberation and I think that if I was the working group chair, in an instance where we had a discussion about whether we should do A or B in the model, they have huge consequences, A gives you this and B gives you this, so there’s big consequences. I would all of this in the report because I think it’s important public information that doesn’t discredit science, it shows that scientists are actually doing their job and I think that too much of ICES’ work [...] is that a lot of these very interesting discussions about what we can say in these situations scientifically but also what we cannot say, they’re a lot of times swept under the rug and this becomes a scientific issue when you cannot replicate these models.”¹⁵²

They continued to provide an example of how consensus could be reached, while also acknowledging divergent opinions. The contributor to ICES explained:

“There’s no objective reason to use [one model over another], we have to decide one or the other, A or B and [one experienced ICES chair that I asked about this] she said she would take an informal vote, like “So how many people think we should do A and how many think we should do B?” and then she would weigh the arguments, so she would ask, “Can you tell me your best arguments and try to weigh that?” and then at the end she had to say, “We’re going for A” and that’s the prerogative of the chair and hopefully, this is noted in the expert group report, that there was a choice between A and B and then ... in that sense it’s not a consensus but it is the consensus that the chair can make the final decision and the chair is responsible then, on behalf of all the working group members.”¹⁵³

In this respect, the encouragement of consensus is explicitly stated in the rules of these science advice bodies, however it is something that remains negotiated as it is put into practice.

5.2.2 Transparency

Another core stipulation in the rules of the various science advice bodies is the need to be transparent. This is largely enacted through the publication of all of the documentation about the science advice body and the work that they produce. Everything from the formal decisions that brought them into being to the minutes from their meetings are shared online. Advice documents are also made available for public access at the same time that they are presented to the EU Commission. Asked about the reasoning behind the

¹⁵¹ ICES Interview 2, January 2019

¹⁵² ICES Interview 1, January 2019

¹⁵³ ICES Interview 1, January 2019

publication of science advice, the interviewees broadly echoed a statement made by the former Chief Scientific Adviser, Anne Glover¹⁵⁴, who stated:

"Without any doubt, transparency is an essential requirement for a science adviser as this allows public scrutiny of the advice given and checks on whether the advice indeed reflects the majority view of the scientific community."

By making their advice available, there was an assumption that interested publics will then be able to independently access and assess that information. One of the GCSA members explained:

"the work should be available to all actors potentially interested in the area, who are then also able to assess the sources upon which advice to the Commission is based."¹⁵⁵

A representative from SAPEA saw the transparency of science advice not only as important for the credibility of the science advice bodies, but also of the policy decisions that are being taken. Transparency was seen as important for performing good policy making in the EU. As a representative from SAPEA commented:

"part of the reason that SAPEA exists, is not just to give advice to the Commission but also to boost public confidence and understanding of science advice for policy, so that people end up ... the theory is so that we can build public trust in the policy that we make by showing how it's well informed by good science and so on. So one of our roles is to do that and one way we do that is by publishing the advice that we give and say, "Look everyone, we can see how well researched it is, how authoritative it is". And then hopefully down the line, you can then see how it influenced the policy and we ended up with a good bit of policy, a good bit of law."¹⁵⁶

However, another interviewee from ICES more critically saw the transparency as providing the basis for both the credibility of the science advisory process, but also as a resource for the public to hold decision-makers to account. The representative from ICES explained:

"My biggest quest is this transparency issue, so I think that our process is quite transparent, you have access to all the data that we're basing our advice upon, of course at an appropriate aggregate level so we're not violating the GDPR, but that is publicly available online, Working Group reports are available publicly and the advice is available and you can see who's been asking for it, and also all our MoUs are available to the public, and I think that's important because there are lots of decisions being taken based upon our advice. And as I said in the beginning, I think one of our biggest tasks is to make this advice as easily readable for everybody so that you can tell, "Ok this is the basis, this is what the politicians have had, the managers have had, and they've interpreted it this way", and we hope to give advice so you can only interpret it in the way it was intended, we're not always successful with that, but that's one of the biggest quests. And if you don't know, if we hide for instance our advice and the management decisions are based on something that is not publicly available, I think both the compliance will be absolutely deteriorated but also our...credibility would be diminished."¹⁵⁷

¹⁵⁴ Glover, A. (2015): A moment of magic realism in the European Commission. In: J. Wilsdon, R. Doubleday (eds): Future Directions for Scientific Advice in Europe. Cambridge: Centre for Science and Policy, University of Cambridge, pp. 60-81.

¹⁵⁵ GCSA Interview, February 2019

¹⁵⁶ SAPEA Interview, October 2018

¹⁵⁷ ICES Interview 2, January 2019

Finally, a contributor to the STECF took this one step further and suggested that by making the advice publicly available it became a resource with which other actors could lobby decision makers to ensure that responsible actions were being taken. They explained:

"I think because the fishing agenda, the world agenda that all the players that are involved, the various big organisations like PEW [Charitable Trusts] and others, all have an interest, not just the Member States whose fishermen are being affected, there's a much bigger agenda out there and so the name of the game across all spheres or best practice across all spheres of management of this type, is get it out there in the public domain and of course, if the kind of material that is produced points to some warning, I've mentioned for example, deep sea fish species and so on, the Commission are more than happy that NGOs and others also bang the drum, if there's an issue that needs to be attended to, I think they are glad if there is sensible lobbying by other organisations in addition to themselves, to try and get economic interests in line and to face up to the fact that, "No, you can't have all these resources, this is critical, you have to play the game""¹⁵⁸

It is worth noting, however, despite a commitment to transparency, the science advice bodies surveyed here also have certain elements of control that constrain the extent to which the public can see into their processes. The STECF allows observers, but this requires approval from the Chair and necessitates being there in person during the expert group work. The SAPEA doesn't publish who is in the working groups while they are in operation, as a way to prevent lobbying from outside. As a SAPEA representative noted:

"So the working group, they're not locked away in a room together, but we don't say who's in the working group, so no one can write to them and say, "You have to say this"."¹⁵⁹

Transparency therefore functions as an important part of the science advice process, but there is still control over what is made transparent and what is left opaque.

5.3 Interfaces

In terms of interfaces that have developed in the science advice process, perhaps most notable are the terms of reference or requests for advice that are negotiated between the science advice bodies and the EU Commission. These encompass the goals and interests that are made apparent in science advice processes. As the examples in this report illustrate, the terms of reference (STECF), MoUs (ICES) or scoping reports (GCSA) are important documents that provide instructions for the science advice bodies, but also define the limits of their authority.

This negotiation of the terms of reference was observed explicitly in a meeting of the STECF in Brussels in December 2018. There, a member of the EU Commission was in attendance and was available to answer questions about the intended scope of the request and the kinds of work that would be most relevant. Indeed, the terms of reference also provided a framework for the Chair to direct the expert working group. At one point when the Chair considered that the expert working group had got bogged down with technical debates and hypothetical questions, the Chair was able to steer them back to their instructions stating we "need to concentrate on giving advice that will help managers make decisions." (Field notes, STECF)

¹⁵⁸ STECF Interview 2, February 2019

¹⁵⁹ SAPEA Interview, October 2018

The recognition that the terms of reference are negotiated is important when considering the kinds of uncertainty and interpretation that can be levelled at the science of fisheries. As a contributor to ICES commented:

*"science doesn't speak for itself, the numbers don't speak for themselves, they have to be interpreted and when you're in these different scientific fora and different political fora, the numbers take on different meanings because of the way you look at it, the way you treat uncertainty, you can be extremely precautionary in an ICES working group meeting about the quota, but then you go into a political forum and that quota is not precautionary at all."*¹⁶⁰

In this respect, the process of science advice is also about using the document of the terms of reference as a negotiating object to understand what the policymaking process needs and what the limits of science are. However, it also sets out the instructions for the science advice bodies with regards to the scope of their authority. A similar more technical description of this process was set out in a recent OECD report on science advice, which noted that "clear guidelines and operating procedures can greatly facilitate and improve the provision of scientific advice"¹⁶¹. However, despite clear guidelines, there appears to also be different sets of goals and interests that shape the science advice process.

One particular example is a growing push from the scientific community for EU fisheries to adopt a longer timeframe and more ecosystem-based approach to setting fish stock quotas. As a representative from ICES commented:

*"ICES has this goal for this ecosystem advice that would actually harvest numbers and quotas from an integrated ecosystem assessment (IEA), and the people who are running these IEAs, there's nine of them done within ICES, they also want their information to be used for advice because it's not and I'm like why are we doing all this work, it is an amazing amount of work that is on top of their normal work, if it's not getting used? The scientists are starting to talk with the stakeholders about how this perhaps could be used in the future but then it has to go much more away from single stock advice to more multi-species advice and more type of ecosystem advice and people are really scared, stakeholders are really scared about the consequences of that. So what does that mean if we go away from single stock advice? That means that you can't do those single stock negotiations, you can't do this last minute horse trading, you all of a sudden have a political system that has to actually think in bulks of time of five or six years instead of 15 months or something like this, or less than that, nine month intervals because you have to negotiate every year."*¹⁶²

In this respect, the requests from advice can evolve from both political pressures and from scientific understanding of the complexity of the fisheries biology.

6. Relevance and use of knowledge

Notably, across the science advice bodies there was a range of disciplinary inputs into the science advice process. Based on the interviews, the distinction between ICES and STECF was emphasized around disciplinary differences. STECF includes economics, whereas ICES doesn't. Indeed, the introduction of economics to the STECF was a relatively recent phenomenon. As one of the contributors to STECF commented:

¹⁶⁰ ICES Interview 1, January 2019

¹⁶¹ OECD (2015): Scientific Advice for Policy Making. p.17. Retrieved from: <https://www.oecd-ilibrary.org/docserver/5js3311jcpwb-en.pdf?expires=1552393587&id=id&accname=guest&checksum=09864E1A7EFD59FC8EFFA1EF56151D94>

¹⁶² ICES Interview 1, January 2019

"the thinking, as I understand it from DG MARE is that, "Let's have a spread of expertise and let's have a spread of people from different countries". The previous incarnation of STCEF was STCF, no there was no economics in there until 1991, something like that"¹⁶³.

One of the major contributions then of SAPEA and the GCSA was that it includes a breadth of disciplines that are not specific to any one issue. As a representative from SAPEA commented:

"something that tripped me up initially [when I started in this job] was the fact that when we talk about science and science advice, we're not using any English sense, meaning excluding arts, humanities and so on, it's in the kind of German sense of wissenschaft, like all the sciences, meaning all bodies of knowledge, so it's everything you'd find in a university essentially, including arts sometimes, but certainly humanities, social sciences, law ..."¹⁶⁴

This point illustrates the need to think about science not in the singular – but in the plural as 'sciences'.

7. Issues of multi-level policy-making

One way to understand some of the issues of multi-level policymaking in the EU with regards to science advice is to explore the recent history of the science adviser position within the EU. This illustrates the ways in which tensions between different member state cultures and the pressures of the EU to offer legitimate institutions play out in relation to the use of evidence and expertise in policy-making. One useful place to start is in 2009 when EU President José Manuel Barroso¹⁶⁵ announced:

"We also need a fundamental review of the way European institutions access and use scientific advice. In the next Commission, I want to set up a Chief Scientific Adviser who has the power to deliver proactive, scientific advice throughout all stages of policy development and delivery. This will reflect the central importance I attach to research and innovation."

The establishment of this new post was an innovation for the EU, and the precise mandate and relations that the CSA would have with the Commission were yet to be defined¹⁶⁶. The post was created in March 2010 with the title: "Chief Scientific Adviser to the President of the European Commission"¹⁶⁷ and therefore should direct science advice explicitly towards the President. The post caused some tension with regards to overlap with the existing JRC and the DG Research and Innovation¹⁶⁸. One particular notable episode during this period related to public views offered by the CSA on genetically modified technologies. Following a request for clarification from an MEP on the Commission's position on these views, the Commission issued a statement noting that: "the CSA has a role in stimulating societal debate on new technologies and to communicate the existing scientific evidence about such

¹⁶³ STECF Interview 1, October 2018

¹⁶⁴ SAPEA Interview, October 2018

¹⁶⁵ Barroso, J.P. (2009): Passion and responsibility: Strengthening Europe in a Time of Change. Speech to the European Parliament. Strasbourg. 15 September 2009. Retrieved from: http://europa.eu/rapid/press-release_SPEECH-09-391_en.htm

¹⁶⁶ Glover, A. (2015): A moment of magic realism in the European Commission. In: J. Wilsdon, R. Doubleday (eds): Future Directions for Scientific Advice in Europe. Cambridge: Centre for Science and Policy, University of Cambridge, pp. 60-81.

¹⁶⁷ Glover, A. (2015): A moment of magic realism in the European Commission. In: J. Wilsdon, R. Doubleday (eds): Future Directions for Scientific Advice in Europe. Cambridge: Centre for Science and Policy, University of Cambridge, pp. 60-81.

¹⁶⁸ Ibid.

technologies. The CSA has a purely advisory function and no role in defining Commission policies. Therefore, her views do not necessarily represent the views of the Commission.”¹⁶⁹ During the period of the CSA, Anne Glover established a series of science advisory support structures within the EU Commission itself, although such efforts were not without their challenges¹⁷⁰. The post of CSA encountered controversy on a number of occasions, but most notably when a nine NGOs wrote to the incoming President Juncker in July 2014 arguing that “the post of CSA is fundamentally problematic as it concentrates too much influence in one person, and undermines in-depth scientific research and assessments carried out by or for the Commission Directorates in the course of policy elaboration”. The CSA post, they suggested, was “unaccountable, intransparent and controversial” and should therefore be abolished¹⁷¹. However, there was support for the CSA role from a large number of scientific organisations and individuals that argued that “we cannot stress strongly enough our objection to any attempt to undermine the integrity and independence of scientific advice received at the highest level of the European Commission.”¹⁷² In October 2014, the post of CSA was abolished¹⁷³.

Reflecting on the challenges of the CSA position, Director General of the Joint Research Centre, Vladimir Šucha, described the EU’s single CSA as “a very difficult experiment” with the particular concern that: “There’s no one person who can understand the milieu of 28 Member States”¹⁷⁴. Following the abolishing of the position, the new President Juncker reaffirmed a commitment to “independent scientific advice”, but wanted to consider new approaches to “institutionalize” the function¹⁷⁵. In particular, there was a recognition that science advice for Europe would look different to what existed previously at any national level. The Commissioner for Research, Innovation and Science, Carlos Moedas, explained in March 2015 that the task was to “look for the most appropriate system for the commission — as opposed to the system that works best in the UK, or in any other particular country.”¹⁷⁶ It was from here that the Scientific Advice Mechanism (SAM) emerged as a science advice structure in 2015 that could bring country contributions together through the GCSA and SAPEA. As with the CSA position that was abolished in 2014, the SAM remains an experiment whose outcome is as yet unknown.

¹⁶⁹ Barroso, J.P. (2012): Answer given by Mr Barroso on behalf of the Commission. Legal Notice. European Parliament. 3 October 2012. Retrieved from:

<http://www.europarl.europa.eu/sides/getAllAnswers.do?reference=E-2012-007606&language=EN>

¹⁷⁰ Glover, A. (2015): A moment of magic realism in the European Commission. In: J. Wilsdon, R. Doubleday (eds): Future Directions for Scientific Advice in Europe. Cambridge: Centre for Science and Policy, University of Cambridge, pp. 60-81.

¹⁷¹ Muilerman, H. et al. (2014): Letter to President-elect of the European Commission, Mr. Jean-Claude Juncker. Brussels, 22 July 2014. Retrieved from:

http://corporateeurope.org/sites/default/files/attachments/ngo_letter_on_chief_scientific_adviser_-_final.pdf

¹⁷² Sense About Science (2014): Scientific scrutiny in Europe is essential. Retrieved from:

<https://archive.senseaboutscience.org/pages/maintain-eu-chief-scientific-advisor.html>

¹⁷³ Glover, A. (2015): A moment of magic realism in the European Commission. In: J. Wilsdon, R. Doubleday (eds): Future Directions for Scientific Advice in Europe. Cambridge: Centre for Science and Policy, University of Cambridge, pp. 60-81.

¹⁷⁴ Science Business (2015): Director General of the Joint Research Centre calls EU chief scientific adviser role into question. Retrieved from: <http://www.sciencebusiness.net/news/76995/Director-General-of-the-Joint-Research-Centre-calls-EU-chief-scientific-adviser-role-into-question>

¹⁷⁵ Rabesandratana, T. (2014): Science adviser role in the new European Commission in limbo. Science. 11 November 2014. Retrieved from: <https://www.sciencemag.org/news/2014/11/science-adviser-role-new-european-commission-limbo>

¹⁷⁶ Abbott, A., P. Campbell (2015): Europe's research commissioner lays out his ambitions. Nature. 23 March 2015. Retrieved from: <https://www.nature.com/news/europe-s-research-commissioner-lays-out-his-ambitions-1.17165>

8. How is the case changing our understanding of Science Diplomacy?

When these science advisory bodies are examined through the lens of science diplomacy – as a “meta-governance framework”¹⁷⁷, which involves “collaborations between stakeholders from science, policy and diplomacy...various governmental or diplomatic organisations as well as non-governmental scientific organisations.”¹⁷⁸ – we can identify a number of valuable insights for the future development of science diplomacy. This section briefly discusses these.

8.1 Cross-cultural working

Perhaps most pertinent to science diplomacy is the way in which science advice bodies are forced to work across cultures, both within the EU and beyond. Not only are contributors to science advice operating across scientific communities and policy communities, but they are also negotiating interactions between disciplines and different national cultures. The case of science advice shows that the ability to learn about and work within other cultures as expected in diplomatic settings also applies to the case of science advice.

8.2 Communities of practice

As set out above, the building of communities in science advice is not only important for growing capacity in the skills of science advice, but also allowing the trust between the different contributors to these processes. As previous research by Dankel et al. (2016: 214)¹⁷⁹ has noted with respect to ICES:

“Several of the industry representatives who hold seats on the Advisory Councils have been involved in projects and collaborations with fishery scientists and have become familiar with the intricacies of the science that underpins ICES advice. As a result of increased interactions between industry representatives, fishery scientists, and the ICES advisory process, the presentation of official ICES advice no longer comes out of a “black box”. The reasons why the advice looks like it does are often already known to the stakeholder representatives whose constituencies will be most affected by the advice in question.”

The case of science advice also shows that the socialisation of practices is not something that only takes place amongst those contributing to science advice processes, it is also something that takes place across those requesting and using the advice.

8.3 Institutionalisation

One challenge that is common to both science advice and science diplomacy is the way they can be institutionalized across different national settings, as well as in the EU’s multi-level structure. The case of science advice suggests that this can only be achieved through experimentation and a willingness to learn from experience. Learning from experience in other countries and transnational settings will also be important. The International Network

¹⁷⁷ Flink, T., C. Rungius (2018): Science Diplomacy in the EU: Practices and Prospects. S4D4C Project Brief No.1, October 2018.

¹⁷⁸ Aukes, E. et al (2020): Towards effective science diplomacy practice. S4D4C Policy Brief No.2, January 2020.

¹⁷⁹ Dankel DJ., K. Stange, KN. Nielsen (2016): What hat are you wearing? On the multiple roles of fishery scientists in the ICES community. In: ICES Journal of Marine Science 73(2): pp. 209-216.

for Government Science Advice (INGSA) has already recognised this in its establishment of a special interest group on science diplomacy¹⁸⁰. In addition to questions of institutionalisation in national settings, there is also the question of whether science advice or diplomacy should focus on specialism or breadth in its disciplinary scope. In what areas, for example, is it good to have diplomats specialised in science diplomacy or alternatively generalist diplomats with some knowledge of the science elements?

8.4 The diploma

The word diplomacy has at its heart the historical traces of the profession in the word diploma, originally meaning a 'state paper' or more precisely from Greek via Latin 'folded paper'¹⁸¹. Just as present-day diplomats are frequently instructed by governments, today's scientific advisory groups are furnished with sets of instructions about how they are to operate and what they are to do in the form of terms of reference or agreed scoping documents. The way in which the diploma of science advice is negotiated between the Commission and the science advice bodies perhaps offers some insights into the ways in which interstate negotiations can be understood.

8.5 Timing of Politics

As set out in the discussion above, the timing of politics is also important to science advice. Previous scholarship by Kuus (2014)¹⁸² has emphasised the value of science advice as being a space in which the politics can be partially resolved through the creation of shared understanding between different governments that might thereby reduce the need for traditional forms of diplomacy through shared problem definition.

8.6 Performance

The issue of transparency explored above also shows how the public display of science advice can function to ensure the credibility of science advice bodies but also as a way in which policies can be challenged. This section also noted, however, how transparency is also carefully orchestrated. Previous scholarship by Hilgartner (2000)¹⁸³ has described science advice processes as having front stage and back stage processes. It may be therefore useful to consider how science diplomacy might also have front stage and back stage processes, and the ways in which transparency is used in diplomacy as a lobbying device as illustrated in the case of science advice.

8.7 Internal capacities

Finally, the examples of science advice bodies examined in this report are all formal structures, but it is also important to note that there are large numbers of scientific and technical experts that sit within the EU Commission and provide input to the policymaking process that are not detected by only looking at formal science advice structures. These internal capacities of science advice fulfil an important function in improving the

¹⁸⁰ INGSA (2019): Science Policy in Diplomacy and External Relations (SPIDER). Retrieved from: <https://www.ingsa.org/divisions/spider/>

¹⁸¹ Oxford English Dictionaries Online (2019).

¹⁸² Kuus, M. (2014): *Geopolitics and Expertise: Knowledge and authority in European diplomacy*. Chichester, UK: John Wiley & Sons.

¹⁸³ Hilgartner, S. (2000): *Science on Stage: Expert advice as public drama*. Stanford, CA.: Stanford University Press.

development of policy on the inside. In a brief recognition to this, a contributor to STECF explained that there is:

"a mix within the Commission of lawyers and social scientists and so on, who typically work on regulations and development of policy but also quite a large body of science experts often detached experts from Member States and there's still some on the Commission now, who have that kind of expertise and can advise from within on the policy."¹⁸⁴

In thinking about science diplomacy, it is therefore important to not only acknowledge the formal structures for science diplomacy, but also to consider the ways in which internal capacities for science diplomacy might already be built into diplomatic systems.

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¹⁸⁴ STECF Interview 2, February 2019

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