



## On the missions of a French Government Chief Scientific Advisor

September 30 2023

The report of the mission on the French research and innovation ecosystem<sup>1</sup>, headed by Philippe Gillet, professor at the Ecole Polytechnique Fédérale de Lausanne (Switzerland), was published on June 15, 2023. This ministerial commission provides 14 recommendations to improve the efficiency and legibility of the French research system and enable it to respond to the major challenges facing society. The report's first recommendation is to create a High Adviser for Science, reporting to the Prime Minister or the President of the Republic. This note focuses exclusively on this first recommendation, a focus which should not be interpreted as an endorsement of the other recommendations of the Gillet Report.

The 31 signatory societies and associations, members of the "Alliance of French academic learned societies", consider that the excessive distance separating political leaders from the Sciences is a major cause of the current dysfunctions in the ecosystem of research, higher education and innovation, as well as of the insufficient consideration given to scientific approaches and knowledge in the public decision-making process.

We propose the creation of a position of "Government Chief Scientific Advisor" (GCSA), reporting to the Prime Minister, with a four-fold mission:

- Ensure that elected representatives and ministers have access to summaries of scientific data that can inform their decisions, and that they are in a position to take them into account. Evaluate *a posteriori* the compatibility of decisions taken with scientific consensus.
- Develop the presence of scientists within government departments, to facilitate the operational implementation of science-informed public policies.
- Enhance the scientific culture of the public and journalists, including both scientific approaches and fundamental knowledge in a wide range of technological, formal, human and social sciences.
- Strengthen France's presence and influence in international organisations working on major global challenges.

The scope and diversity of these missions will require the creation of a suitable environment for the GCSA, including a technical support team and one or more interdisciplinary scientific councils, whose collegial positions will be embodied by the GCSA. Lastly, an appendix lists several points of attention to be considered in advance of the creation of this position, including its mode of appointment, the characteristics of its mandate and its relationship with current advisory structures.

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<sup>1</sup> [Rapport de la mission Gillet sur l'écosystème de la recherche et de l'innovation](#), 2023

## Signatories

### Academic Learned societies:

- Association des Enseignants Chercheurs de Psychologie des Universités
- Association des historiens modernistes des universités françaises
- Association Française d'Economie Politique
- Association Française d'études américaines
- Association Française de Mécanique
- Association pour la Recherche en Didactique des Mathématiques
- Association pour la recherche en didactique des sciences et des technologies
- Association pour la Recherche en Didactique et Acquisition de l'Anglais
- CILAC – Comité d'information et de liaison pour l'archéologie, l'étude et la mise en valeur du patrimoine industriel
- Société Botanique de France
- Société Chimique de France
- Société d'études anglo-américaines des XVIIe et XVIIIe siècles
- Société de Neuroendocrinologie
- Société de Psychophysologie et de Neurosciences Cognitives
- Société des Anglicistes de l'Enseignement Supérieur
- Société des Historiens médiévistes de l'enseignement supérieur public
- Société des Neurosciences
- Société Française d'Acoustique
- Société Française d'Alcoologie
- Société française d'Optique
- Société Française d'Écologie et d'Évolution
- Société Française de Physique
- Société Française de Psychologie
- Société Française de Virologie
- Société Française pour le Droit de l'Environnement
- Société Francophone de Santé et Environnement
- Société Informatique de France
- Société Mathématique de France

### Associated members:

- Association française des petits débrouillards
- Société Nationale d'Horticulture de France
- Association des Professeurs de Mathématiques de Enseignement Public de la maternelle à l'université

## Introduction: the Gillet Report

The Gillet Report was commissioned by the French Ministry of Higher Education and Research (MHER). Minister Sylvie Retailleau's letter of assignment<sup>2</sup> called for advice on how to "improve efficiency and clarity [of the research system], as well as the ability to mobilise research resources in response to the major challenges facing society". This rather narrow framework made no mention of the links between research and higher education. Nor was any thought given to strengthening the ability of government and administrative bodies to use the fruits of scientific research to inform public policy. Professor Gillet was thus asked to improve the efficiency of the research system without taking into account the full range of its missions and without questioning its aims for society. Finally, the disciplines represented among the members of the Gillet commission only cover natural and technological sciences. There is very little mention of the humanities and social sciences, and the report conveys a view of the missions of the academic world that is heavily biased towards technological innovation.

The fourteen recommendations in the Gillet report are mainly aimed at clarifying the national research strategy, (re)defining the relationship between universities and research bodies, reducing the administrative burden of research, supporting innovation and encouraging scientists to take risks.

Its first recommendation is to create a "High Adviser for Science" (HAS), reporting to the Prime Minister or the President of the Republic. The main tasks of this scientific figure would be to define the national research strategy and to help ensure the overall coherence of the research system. Their recommendations would then be implemented by the Ministry of Higher Education and Research (MHER). The notion of "advice" is ambiguous here, since the priorities defined by this person would be followed by the MHER, which would become a mere executor of a strategy whose definition would be beyond its control. The HAS would therefore also be a stakeholder in the decision-making process, in the same way as the research advisers to the President of the Republic<sup>3</sup> or the Prime Minister<sup>4</sup> are at present, the main difference being that they would be more visible to the public. This proposal would not give greater weight or legitimacy to the proposals emanating from the academic sphere via the bodies of its supervisory ministry. An alternative that we consider to be more effective to improve the overall coherence of the system would be to increase the political weight of the MHER by entrusting it with the definition of the national research strategy and providing it with the necessary resources to fulfil its role of interministerial coordination of the research ecosystem, in particular by strengthening its authority over the General Secretariat for Investment (SGPI).

### **"Chief Scientific Advisers" around the world: a key role in informing public policy.**

Numerous examples, both old and new, illustrate the importance of taking sufficient account of scientific knowledge in the public decision-making process<sup>5,6,7</sup>. Many countries have set up a 'Chief Scientific Adviser'<sup>8</sup> (CSA), whose main task is to build bridges between the academic and political worlds and to create a

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<sup>2</sup> The [letter from the Minister](#) for Higher Education and Research is available on the Alliance's website.

<sup>3</sup> <https://www.elysee.fr/la-presidence/cabinet-du-president-de-la-republique-et-services-de-l-elysee>

<sup>4</sup> <https://lannuaire.service-public.fr/gouvernement/a8bdd865-caec-44f0-8ab1-9a0957243666>

<sup>5</sup> [Covid-19 : « L'inculture scientifique des élites françaises a des effets profonds sur la conduite des affaires de l'Etat »](#) P. Juvin, Le Monde 2021

<sup>6</sup> ["La politique à l'épreuve de la science"](#), JF Mattei, Bulletin de l'Académie Nationale de Médecine, 2022

<sup>7</sup> [Hearing with Prof. Yves Bréchet](#), former High Commissioner for Atomic Energy, National Assembly, 2022

<sup>8</sup> Some have been operating for up to 50 years, notably in the Commonwealth countries (United Kingdom, Canada, Australia, Ireland, New Zealand, India, etc.), the United States and the European Commission. A list of the web pages of these CSAs is available in appendix.

"permanent familiarity of decision-makers with the concepts and tools of science"<sup>9</sup>. The CSAs translate and transmit knowledge - explaining their uncertainties - thus defining a "field of possibilities", without taking part in the arbitration or decisions, which are the responsibility of political leaders.

The scope and ambition of this main mission, and the clear distinction between, on the one hand, an advisory mission carried out by a scientist and, on the other, a decision-making mission carried out by policy-makers, distinguish foreign CSAs from the HAS proposed by the Gillet report. The CSAs, who are active scientific personalities of the highest calibre, are also well known to the general public and regularly appear in the media to present and explain scientific data and concepts, as well as the process by which they were established. Their advice is public and they generally publish an annual overview of their activities. Their independence from political and economic decision-makers and their freedom of expression are essential in establishing a relationship of trust with the public and the academic world.

While some CSAs also play an executive role, such as heading research organisations<sup>10</sup>, such a role can lead to conflicts of interest that could undermine the independence of the CSAs advice<sup>11</sup>. When a CSA is responsible for the operational coordination of research structures or funding agencies, this role is subordinate to its role as a "science broker".

Finally, the CSAs act within the framework of a collegial ecosystem. Because of the diversity of their missions and the fact that policy decisions need to be informed by an interdisciplinary approach, foreign CSAs generally rely on one or more permanent interdisciplinary councils, for which they often act as coordinators and spokespersons. These councils may be made up of national or foreign public researchers, scientific advisers from the various ministries or administrations where they exist, or even representatives of certain influential groups<sup>12</sup>.

### **Creating a post of Chief Scientific Adviser to the French Government to bring the worlds of science and public policy closer together**

While we are not convinced by the tasks of coordinating the research ecosystem proposed by the Gillet report for the CSA, the presence of a high-level scientific adviser to the government could, following the example of practices in other countries, help ensure that scientific methods and knowledge are taken into account when drawing up public policies<sup>13</sup>.

Based on the experience of countries that have set up a CSA, we propose to extend and reorientate the post of "High Adviser on Science" proposed by the Gillet report to create a post of "Government Chief Scientific Advisor" (GCSA), reporting to the Prime Minister, whose main mission - advisory but issuing public advices - would be to develop relations between science, public action and society. We propose to structure this mission along four main pillars (Figure 1).

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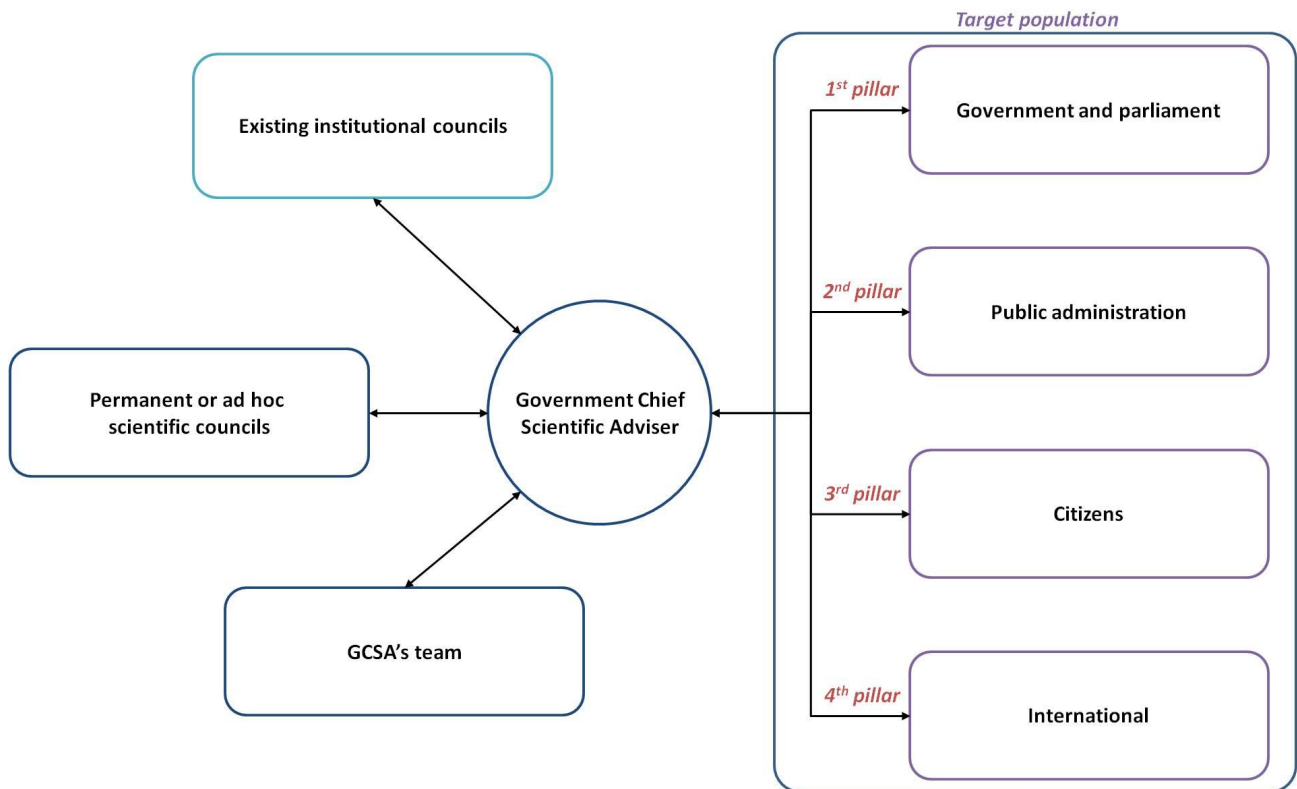
<sup>9</sup> "[Le conseiller scientifique chaînon manquant mais pas suffisant entre expertise et décideurs](#)" Alain Beretz, *The conversation*, 7 June 2020.

<sup>10</sup> For example, Prof. [Rémi Quirion](#) in Québec

<sup>11</sup> "[Chief Scientific Advisor needs to be independent](#)", Royal Irish Academy, 2021.

<sup>12</sup> For example: industry in the USA, young citizens in Canada, learned societies and academies in the UK.

<sup>13</sup> "[The art of science advice to government](#)" P. Gluckman, *Nature* 2014



**Figure 1:** Proposed missions and environment of the Government Chief Scientific Adviser.

The first pillar will be that of "scientific broker"<sup>14</sup>: **ensuring that elected representatives and ministers have access to summaries of scientific data that can inform them**, and that their understanding of the scientific process is sufficient to integrate these data - with their uncertainties - into their decision-making. The GCSA's advice on short-, medium- or long-term issues may be sought by the government, central government departments or local and regional authorities. The GCSA should also be allowed to take up any subject on which it considers that scientific information is needed for the political sphere, even if the subject is politically sensitive. The GCSA's advice should be published widely - without censorship - and sent directly to the Prime Minister, with copies to the relevant ministries and government departments. In this context, the GCSA will also consider ways of increasing the scientific literacy - including in the human and social sciences - of politicians and members of parliament<sup>15</sup>, as well as the scientists' understanding of public action<sup>16</sup>, so that they have a better understanding of the political decision-making process and its constraints. This pillar could be extended to include *a posteriori* assessment of the compatibility of decisions taken with scientific consensus.

The second pillar will be to **develop the presence - particularly weak in France - of scientists within government departments**, in order to facilitate the operational implementation of science-informed public policies<sup>17</sup>. To this end, the GCSA will make recommendations on the initial and continuing training of senior civil servants in central and local governments and on increasing the number of PhDs in positions of

<sup>14</sup> "[The art of science advice to government](#)" P. Gluckman, *Nature* 2014

<sup>15</sup> At the initiative of the President of the National Assembly, Yaël Braun-Pivet, a crash course on the issues of climate change and biodiversity loss was offered, with mixed success, to MPs in 2023.

<sup>16</sup> There are a number of schemes in France and elsewhere for bringing scientists and members of Parliament together, such as the twinning arrangements between scientists and politicians proposed by the Royal Society or the French "[Institut du Sénat](#)".

<sup>17</sup> Climate urgency : « [L'écologie ne fait toujours pas partie du logiciel de la haute administration](#) » *Le Monde*, 2020

responsibility. This role, mentioned in the Gillet report, echoes the government's decision to train civil servants in ecological transition issues. It will also encourage the creation and networking of regional scientific councils, both general and thematic, such as "[AclimaTerra](#)" in New Aquitaine, the "[Breton High Council for Climate](#)", the "[Normandy IPCC](#)" and the "[GREC-Sud](#)". More generally, the GCSA's action will help identify possible improvements to the scientific and technological monitoring process within the various ministries and regional administrations.

The third pillar will be to **strengthen the citizens' scientific literacy, including both scientific methods and foundational knowledge in a broad range of technological, natural, human and social sciences**. The Covid crisis revealed just how difficult it is for the public - and for journalists - to assess the quality of scientific information put forward by different players or on social networks. This focus on explaining scientific approaches will involve increasing the proportion of initial and in-service training for journalists devoted to scientific approaches, providing better support for scientific outreach<sup>18</sup> and citizen science, and educating French children about scientific approaches - and not just their results. In particular, the GCSA will work towards closer collaboration between the Ministry of Education and the MHER. This pillar will also include the formulation of recommendations for open access to scientific publications and for the strengthening of practices guaranteeing the scientific integrity of the research conducted, a requirement to build trust in the results of scientific research.

The final pillar of the GCSA's work will be international in scope. It will aim to **strengthen France's presence and influence in international advisory bodies on global challenges that transcend national borders**. This mission differs from those of the Ambassador Delegate for Science, Technology and Innovation and the network of scientific attachés in French embassies, whose primary aim is "to increase the visibility, influence and attractiveness of French research"<sup>19</sup>. The appointment of a French equivalent of the CSAs of other countries will enable France to strengthen its presence within international bodies such as the International Network for Governmental Science Advice ([Ingsa](#)), at a time when the latter is in the process of structuring its European branch.

The originality and importance of the GCSA can only be understood in the light of these four pillars: endowing this function with sufficient prerogatives to intervene in these four areas is needed to create the synergies necessary for the acculturation of the scientific, political and public spheres with regard to the needs of French society.

The diversity and ambition of the missions entrusted to the GCSA are not compatible with the actions of a single person. A suitable environment needs to be created (Figure 1), including a support team and one or more interdisciplinary scientific councils, either permanent or created *ad hoc* to meet a specific demand. The GCSA will act as coordinator and spokesperson for these boards. The advice given by the GCSA will therefore reflect a consensual collegiate position. Particular attention will have to be paid to the relationship between the councils on which the GCSA will rest their advice and the many existing scientific advisory institutions, with a view to maximising synergies and minimising redundancies<sup>20</sup>. These include France Stratégie<sup>21</sup>, the French Office for Scientific integrity<sup>22</sup>, the "Office parlementaire d'évaluation des choix

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<sup>18</sup> Example: quality labels, or public procurement to provide an economic model for the sector.

<sup>19</sup> See the website of the ministry of foreign affairs dedicated to [scientific diplomacy](#)

<sup>20</sup> See below the "Points of attention" appendix

<sup>21</sup> [France Stratégie](#), a public body for expertise and forward-looking analysis, was created in 2013 and reports to the Prime Minister. One of its main missions is to propose public policy options through consultation with various stakeholders, including researchers. The [High Council for Climate](#) is attached to it.

<sup>22</sup> <https://www.hceres.fr/fr/ofis>

scientifiques et technologiques”<sup>23</sup>, the national Academies, the “High Council for Climate”<sup>24</sup>, and certain advisory missions of the “National council of higher education and Research”<sup>25</sup>.

To reinforce their transparency and independence, the GCSA support team could be grouped together within an independent administrative authority, separate from the major institutions already steering higher education and research (HCERES and SGPI in particular). The “Defender of rights”<sup>26</sup> and the “General Controller of Places of Detention and Imprisonment”<sup>27</sup> provide possible models.

### **Creating a relationship of trust between scientists, politicians and the public**

To fulfil its missions, the GCSA will need to establish a relationship of trust with the government and the public that is demanding, constructive and transparent, on subjects that often require an interdisciplinary approach drawing on science from a wide range of disciplines. The extent of this trust will depend on the GCSA's ability to explain the contributions of the scientific approach: if the sciences are - quite rightly - only one of the many representations of the world to which the government and the public are exposed, it is necessary to explain how the approaches they use to construct knowledge differ from and complement those of other players.

To achieve this, the GCSA must be an experienced scientist who is recognised by his or her peers and who, at the time of appointment, is pursuing an active research career. Particular attention should be paid to the method of appointment and the characteristics (duration, revocability) of the GCSA's mandate<sup>28</sup>. The independence of their advice will be strengthened if the GCSA remains affiliated to an academic institution (university or national research body) - thus benefiting from academic freedom - and is temporarily placed in the service of the Prime Minister<sup>29</sup> or of a dedicated independent State institution. Their research activities will be put on hold in order to avoid possible conflicts of interest and to allow them to devote fully to their advisory role. The GCSA's independence will also be strengthened if their appointment, proposed by the Prime Minister, is approved by a large majority of members of parliament.

An important aspect of the GCSA's missions will be to identify areas in which the scientific consensus is sufficiently solid to inform public policy, and to explain this consensus and how it has been built up. When this is not the case, for example when a sudden crisis such as Covid 19 occurs, the GCSA will help enlighten the public and decision-makers by explaining in simple, dispassionate terms any scientific controversy and the research work currently carried out to resolve them. In this case, he or she could also advise the government on setting up *ad hoc* thematic scientific councils and emergency research funds to enable timely research projects to be launched quickly.

### **Conclusion**

The proposal in the Gillet Report to appoint a high-level adviser on science provides an opportunity for much-needed reflection on the place of scientific approaches and knowledge in French society and in public action.

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<sup>23</sup> OPECST [website](#)

<sup>24</sup> HCC [website](#)

<sup>25</sup> [CNESER website](#)

<sup>26</sup> <https://www.defenseurdesdroits.fr/>

<sup>27</sup> <https://www.cglpl.fr/missions-et-actions/autorite-independante/>

<sup>28</sup> See Appendix below

<sup>29</sup> “[The art of science advice to government](#)” P. Gluckman, *Nature* 2014.

This note proposes a different reading of the adviser's missions from that of the Gillet Report. Like most countries that have appointed a government scientific adviser, we argue in favour of the adviser's main mission being to educate public decision-makers and the general public about sciences.

The personality and culture of the GCSA will play an important role in their ability to navigate - with diplomacy - between several worlds while maintaining a high level of trust between the various players. But it is the precise definition of the GCSA's missions, the human and financial resources that will be provided to carry them out, and their interactions with the various public advisory bodies that will be decisive.

Only if sufficient thought is given to these points will the GCSA be able to act effectively to ensure that France informs its public policies with scientific knowledge and takes its place in the various international consultative bodies dealing with global challenges.



## **Appendix**

### **Points for consideration**

During the preparation of this note, we felt that certain points relating to the creation of the position of GCSA required further consideration, without however calling into question the main idea set out in the text presented above.

#### **Appointment procedure**

The person who assumes the role of GCSA will have an important role in embodying science in the eyes of the public and in formulating recommendations to the government and administrations. To do this, they will need to build the necessary bonds of trust, be scientifically legitimate and demonstrate independence from political powers and pressure groups that might seek to bias or selectively present scientific knowledge.

A first point of attention therefore concerns the method of appointing the GCSA and associated scientific councils. The GCSA could be chosen first and then surround themselves with scientific collaborators, including a permanent scientific council with the collective expertise required to rule on interdisciplinary issues. Alternatively, a permanent interdisciplinary scientific council could be appointed first, that would elect a chair from among its members to act as GCSA.

In both of these scenarios, it is important to consider the identity of the stakeholders entitled to propose candidates for these positions. Nominations should reflect the diversity of scientific disciplines and come from institutions able to assess the scientific legitimacy of the person proposed to take on these functions. For this reason, it would be desirable for the GCSA and the members of the permanent scientific council surrounding them to be proposed by the main public scientific institutions, including in particular national research bodies, universities, learned societies and national academies.

To ensure that the GCSA is a figure with strong cross-party support, their appointment must be approved by a large majority of both houses of parliament. The appointment of presidents of research bodies is currently approved by the Culture Committees of both chambers. As the GCSA's missions extend beyond culture and education (see, for example, their role in increasing the presence of scientists in government departments), other committees could also be consulted, while ensuring that the process remains simple enough to be operational.

#### **Duration and nature of the mandate**

The stability and continuity of the GCSA's activities are important for maintaining coherent scientific expertise. Their mandate should therefore last several years. The duration of the mandates of foreign CSAs can favour continuity (fixed, irrevocable duration, uncoupled from the electoral calendar) or the establishment of a relationship of trust (mandates timed to coincide with legislative elections, or of indefinite duration revocable only by decision of the government). Both scenarios have their virtues.

The very nature of the mandate entrusted to the GCSA, and by extension to their permanent scientific council(s), can be conceived in different ways. At least two working hypotheses can be envisaged:

- An authority reporting to the Prime Minister, in order to foster a relationship of trust between the GCSA and the executive. In this case, the GCSA and their permanent scientific council could be dismissed or reappointed by the government, particularly if there is a change of government. The GCSA's role would chiefly be to provide information and advice to the government on which they depend. This option would ensure faster cooperation between the GCSA and the government, but would base the balance of the four pillars on political directives.
- An independent administrative authority, like the “Défenseur des droits” or the “Comité consultatif national d'éthique” (CCNE). Under this hypothesis, the GCSA would necessarily be irrevocable and its mandate would, in principle, not be renewable after its term. The action of the GCSA would thus be protected from any government interference. This option would promote the independence of advice, but could reduce the intensity of the interactions between the GCSA and the government.

### **Relations with existing advisory bodies and structures**

The establishment of the GCSA and its environment is an opportunity to reconsider the operations and interconnections of the numerous existing entities responsible for monitoring, forecasting and offering guidance on higher education and research, and their relationship with society.

The missions of several bodies or organisations partly overlap with those envisaged for the GCSA. In some cases, a merger could be envisaged. For example, the “High Council for Climate” and the “French Office for Scientific Integrity”, whose missions fall under pillars 1 and 3 of the GCSA's missions respectively, could be directly affiliated to the GCSA.

Other bodies should remain independent of the GCSA, to ensure a plurality of opinions, or because their operating methods are too different from those of the GCSA. This is the case of the Parliamentary Office for the Evaluation of Scientific and Technological Choices, which “informs Parliament of the consequences of scientific and technological choices, in order to guide its decisions”, and which has its own scientific council. Similarly, “France Stratégie”'s missions include the forecasting and the evaluation of public policies, which partly overlaps with the first and second pillars - informing public decision-makers and administrations. However, because of its composition, “France Stratégie” does not ambition to bring about an interdisciplinary consensus on all the issues on which the sciences can inform government action. In order to avoid unnecessary cacophony, it will be important to coordinate the work of the GCSA and these bodies.

Other existing bodies also deserve to be considered in the light of the GCSA's missions. For example, the creation of an appointed GCSA must not upset the delicate balance of bodies combining appointed and elected members, a balance without which confidence in the public authorities and their administrations could not fully persist. The place of joint bodies composed at least in part of elected representatives, such as the “Conseil national de l'enseignement supérieur

et de la recherche” (Cneser) or the sections, committees and councils of institutions such as the “Conseil national des Universités” (CNU) or the “Comité national de la recherche scientifique” (CoNRS), must therefore be preserved.

Several public training bodies could benefit from the creation of the GCSA. The second pillar of the GCSA's missions will necessarily lead it to interact with the “Centre national de la formation publique territoriale” ([CNFPT](#)), the “Institut national des études territoriales” ([INET](#)) and the “Institut national du service public” ([INSP](#)), which are in charge of the training of local and central senior civil servants. The GCSA could work jointly with these institutions to attract more PhDs to the senior civil service. The “Institut des hautes études pour la science et la technologie” ([IHEST](#)), created in 2007 and placed under the supervision of the MHER, "provides training, disseminates scientific and technical culture and stimulates public debate on scientific and technological progress and its impact on society", according to its founding decree. Each year, IHEST trains around ten decision-makers in science and technology, which contributes to the first three pillars of the GCSA's missions.

The French National Research Agency (ANR) is the main architect of the majority of public funding for research projects and, as such, is also in charge of setting up research programmes that respond to priority societal issues (such as the Covid19 epidemic). It would be reasonable for the GCSA to advise on funding programmes in areas where the government has requested its expertise, in order to speed up scientific advances on pressing questions.

The national academies, whether or not they are part of the Institut de France, also have responsibilities related to pillars 3 and 4 of the GCSA's missions, for example because of the Académie of Sciences' role in communicating scientific culture to the general public and in building bridges with its international counterparts. The Academies' broad, multidisciplinary base is an undeniable asset when it comes to carrying out such missions, even if a lack of parity and certain past mistakes are regrettable. It would be desirable for the GCSA to consult the Academies on a regular basis to carry out its missions.