A comparative analysis of themes across S- and G-Statements

November 2024

A project supported by IAP and implemented by CultureBase Consulting

The InterAcademy Partnership (IAP)

Under the umbrella of the InterAcademy Partnership (IAP), 150 national, regional and global member academies work together to support the vital role of science in seeking evidence-based solutions to the world's most challenging problems. In particular, IAP harnesses the expertise of the world's scientific, medical and engineering leaders to advance sound policies, improve public health, promote excellence in science education, and achieve other critical development goals. IAP's four regional networks - AASSA, EASAC, IANAS and NASAC - are responsible for managing and implementing many IAP-funded projects and help make IAP's work relevant around the world.

Culture Base Consulting
info@culturebase-consulting.co.uk
https://culturebase-consulting.co.uk/

IAP Secretariat - Washington DC
The US National Academies of Sciences,
Engineering and Medicine
500 Fifth Street, NW - Washington, DC, 20001, USA
secretariat@iapartnership.org

IAP Secretariat - Trieste
The World Academy of Sciences (TWAS)
ICTP Campus - Strada Costiera 11
34151, Trieste, Italy
iap@twas.org

Twitter/X and Mastodon: @IAPartnership
www.linkedin.com/company/
interacademypartnership
https://tinyurl.com/IAPyoutube
www.interacademies.org

Preface

The Science Academies' Statements (S-statements) to the G7 and G20 summits are collaborative documents that present the consensus of leading national science academies of the G7 and G20 nations on pressing global issues ranging from climate change and health to technological innovation and economic growth. They are designed to inform and influence the policies of advanced and emerging economies on these issues by communicating science-based recommendations to G7 and G20 leaders. By advocating for collaboration across G7 and G20 nations, S-Statements aim to strengthen the international science and policy community's ability to address critical issues in a cohesive and effective way, to improve outcomes for societies worldwide.

The InterAcademy Partnership (IAP) undertook an analysis and issued a report on thematic overlaps and correlations between the S-Statements issued collaboratively by national science academies, and the declarations and communiqués from G7 and G20 summits—G-Statements. The conclusion from the analysis is clear: Science academies and G7 and G20 governments are well- aligned on priority issues, goals, and global policy initiative needs, and furthermore, academies are well-positioned to provide reliable scientific expertise. The report also demonstrates that science academies can bring emerging issues to the forefront, for them to be recognized in policy initiatives by G7 and G20 governments. This forward-thinking approach by the science academies helps governments understand the scope, implications, and potential solutions for emerging issues, and aids the setting of agendas for international collaboration.

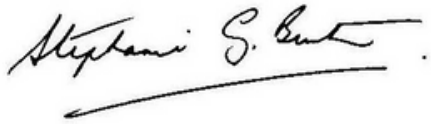
We recognize that preparation of S- and G-Statements involves extensive collaboration and deliberation between science academies and governments. Even if an issue raised in the S-Statement is not explicitly reflected in the G-Statement, this does not necessarily imply that it was overlooked; such issues are often considered during behind-the-scenes discussions or in subsequent dialogues.

We also recognize that while science academies provide essential, evidence-based input to G-Statements, they are one of several important contributing groups. Policymakers also draw on insights from economics-focused bodies, civil society organizations, private sector leaders, and international institutions, to develop well-rounded, actionable policies that can address diverse global challenges.

This IAP report is the first public report to systematically analyze the correlations between S-Statements and G-Statements. We hope it serves as a valuable resource for member academies, supporting their strategic planning within the G7 and G20 contexts. Beyond that, we aspire for this report to have a broader impact, reinforcing the role of science as a foundation for policy, empowering all science academies to strengthen engagement with their respective governments, and reaffirming their role as essential partners in science-informed policymaking.

In closing, we would like to thank Dr. Ben Bleasdale Director, CultureBase Consulting, for carrying out the analysis of the S- and G-Statements and for preparing the report, and Dr. Ourania (Rania) Kosti, Executive Director, IAP Secretariat, for coordinating this effort.

Margaret A. Hamburg, IAP Co-President



Stephanie Burton, IAP Co-Chair

Table of contents

Executive summary

The national academies of the G7 and G20 States provide scientific advice at the annual summits of Heads of State and Government in the form of **G-Science Academy Statements**, or **"S-Statements"** as they are known. Each set of S-Statements seeks to address important global challenges of that moment. They are published and delivered to governments ahead of the G7 and G20 summits, with the intention of informing both policymaking discussions and the public. The policy outcomes of the G7 and G20 summits are captured in a set of joint declarations known as **"G-Statements"** produced at each summit.

Taking 2013–2023 as a sample window, this project catalogued 42 themes appearing in S7 and S20 statements representing six broad groupings: environment; health; socioeconomic issues; science system; science and society, and emerging technology. These themes were then mapped against those of G7 and G20 statements in this same sample window, to identify trends. This comparative analysis offers insights into the possible relationship between S-Statements and G-Statements over time. The analysis is based solely on published papers and does not include qualitative interviews with stakeholders, therefore we note that it cannot reflect the full process of providing policy advice by S7 and S20 to the G7 and G20 summits.

The resulting data shows extensive correlation between S- and G-Statements, across a broad range of themes. Some themes appear to be firmly embedded as priorities across both the scientific and policymaking community. Other themes show a possible responsive relationship, while a small number of themes appear to have limited transfer from S-Statements into G-Statements. Based on this data, this project describes four modes of time-based directional relationship for the 42 themes identified:

1. **S and G in parallel**
2. **S precedes G**
3. **S not translating to G**
4. **G precedes S**

The data reveals the scale of international cooperation across many themes. We can observe shifts in the pattern and intensity of focus within the statements, including the likely impact of milestones and events such as the Paris Agreement or Covid-19 pandemic, and an underlying broadening of demand on the national academies for advice across an increasing suite of priority themes. Such insights may help inform the production and dissemination of S-Statements.

Introduction

The national academies of the Group of Seven (G7) and Group of Twenty (G20) States provide scientific advice at the annual summits of Heads of State and Government. Since 2005, the national academies of the participating countries have convened annual G-Science Academies meetings – these “Science7” (S7) and “Science20” (S20) formats provide a platform for the collaborative preparation of science-based recommendations – the **G-Science Academy Statements**, or **“S-Statements”** as they are known.

Participation at the S7 meetings varies, but typically centres around the G7 nations (Canada, France, Germany, Italy, Japan, UK and USA). After 1997, the G7 expanded to include Russia as the G8, but subsequently returned to its original size after Russia’s membership was indefinitely suspended in 2014.

The S20 meetings involve further national academies representing Argentina, Australia, Brazil, China, India, Indonesia, Mexico, Russia, Saudi Arabia, South Africa, South Korea and Turkey, and representatives from the European Union and the African Union.

The set of documents produced at each S7 or S20 meeting seek to address important global challenges of that moment. They are published and delivered to governments ahead of the G7 and G20 summits, with the intention of informing both policymaking discussions and the public. The policy outcomes of the G7 and G20 summits are captured in a set of joint declarations known as **“G-Statements”**, which are produced at each summit.

Project objective

There is limited published analysis on the correlation between the S- and G-Statements.

This project explores correlations through a comparative analysis of themes found across S- and G-Statements, by:

- **Cataloging the themes appearing in S7 and S20 statements, and mapping these against G7 and G20 statements**
- **Identifying thematic trends including continuity in the topics identified as national and global priorities**

Methodology

To produce the comparative analysis, the G-Science Academy Statements (or S-Statements) were considered as inputs, and the joint declaration documents produced at G7/8/20 Summits (or G-Statements) were considered as outputs. Note that this is only to test correlation and does not imply that the inclusion of a topic in an S-Statement causes its inclusion in a G-Statement. A study window of 2013-2023 was chosen to yield a robust sample size, and a document library was collated.

The document library (see Annex 2) was sourced and cross-checked across multiple sources, including:

- Host nation webpages and press releases
- G7 Information Centre (University of Toronto, Canada)[1]
- Royal Society S-Statement webpages[2]
- US Department of State press releases

This yielded a total of **46** primary publications from S7, S8 and S20 meetings, and **76** primary joint publications (e.g. communiques, action plans) from the G7, G8 and G20 between 2013 and 2023 inclusive.

A thematic analysis was then conducted, using a manual review process to identify high-level themes in each individual document (e.g. biodiversity, antimicrobial resistance, open data) and build up a thematic framework. Based on preliminary analysis, we adopted a two-tier categorisation approach to differentiate between “major” themes within a document (e.g., a headline topic or focus for recommendations) versus “minor” themes (e.g., referenced as context or as an illustrative example).

The data was then visualized to show whether each set of S- or G-Statements in each year had a major, minor, or no mention of each theme in the framework. This supported the identification of correlations over time between the two populations of statements.

[1] *G7 Information Centre (utoronto.ca)*
[2] *G-Science Academies Meetings | Royal Society*

Summary of themes

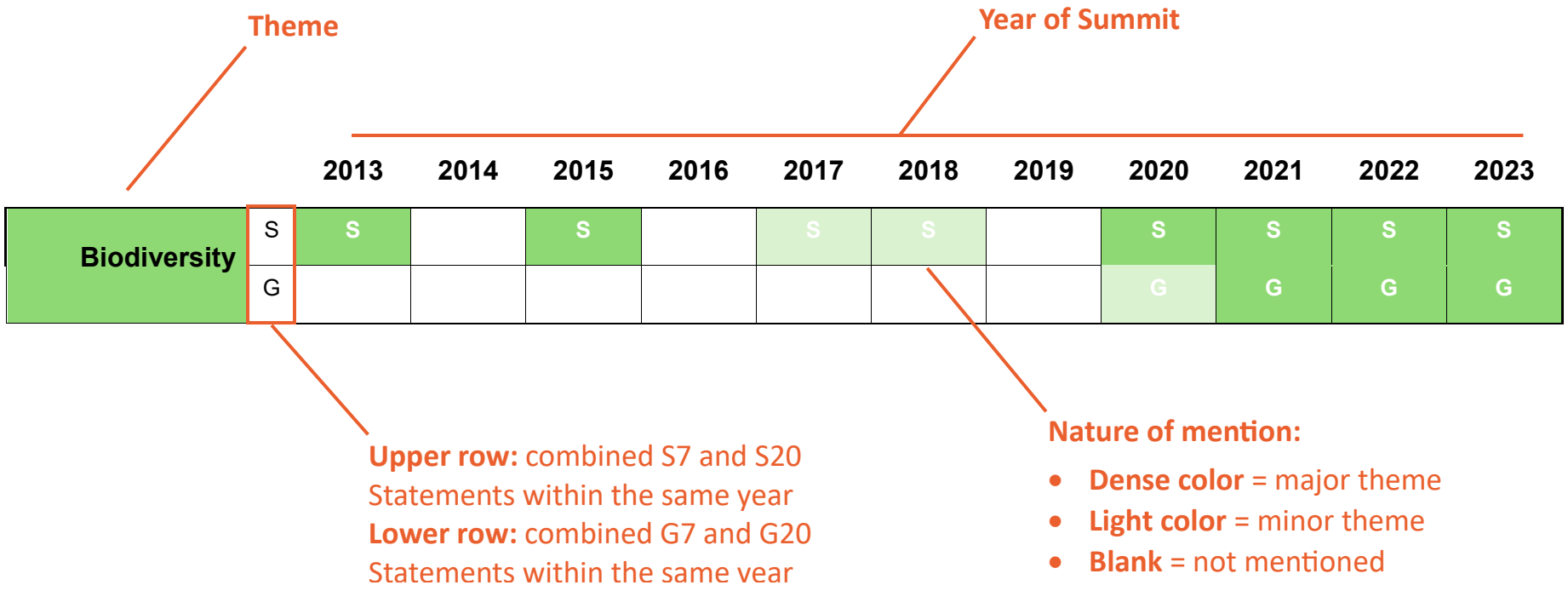
Reviewing the document library yielded 42 themes, which we have grouped under six broad groupings for comparison.

Environment	Health	Socioeconomic Issues	Science System	Science and Society	Emerging Technology
Oceans	Covid-19	Energy	Interdisciplinarity	Trust in Science	Quantum Tech
Biodiversity	Ageing	Sustainable Development	Data Sharing and Open Access	Information Security	Robotics
Climate Change	One Health and Zoonoses	Cultural Assets and Heritage	International Scientific Collaboration	Equity, Diversity and Inclusion	Artificial Intelligence
Food Systems	Diagnostics and Surveillance	Poverty and Economic Growth	Academia-Industry Partnership	Global Equity and Capacity Building	
Polar Science	Anti-Microbial Resistance (AMR)	Population Growth	Researcher Assessment	Science Literacy	
Water Systems	Neglected Tropical Diseases	Disaster Resilience	R&D Careers and Workforce	Evidence-informed Policy	
	Health Data and Informatics		R&D Funding	Safe and Ethical Research	
	Health Equity and Access		Intellectual Property Rights	Public Involvement and Engagement	
	Neuroscience			Governance and Standards	
	Pandemic Preparedness				

Data visualization

The data produced by this project allows for comparisons between S- and G-Statements, between years, between themes and between major and minor mentions of a theme within the S- and G-Statements. For this report, we have sought to visualize the data in a way that supports all three comparisons by the reader, allowing others to build on the trends we have described.

Here we take an example theme – *Biodiversity* – and use it to explain the individual components of the data visualization format we have used consistently throughout this report:



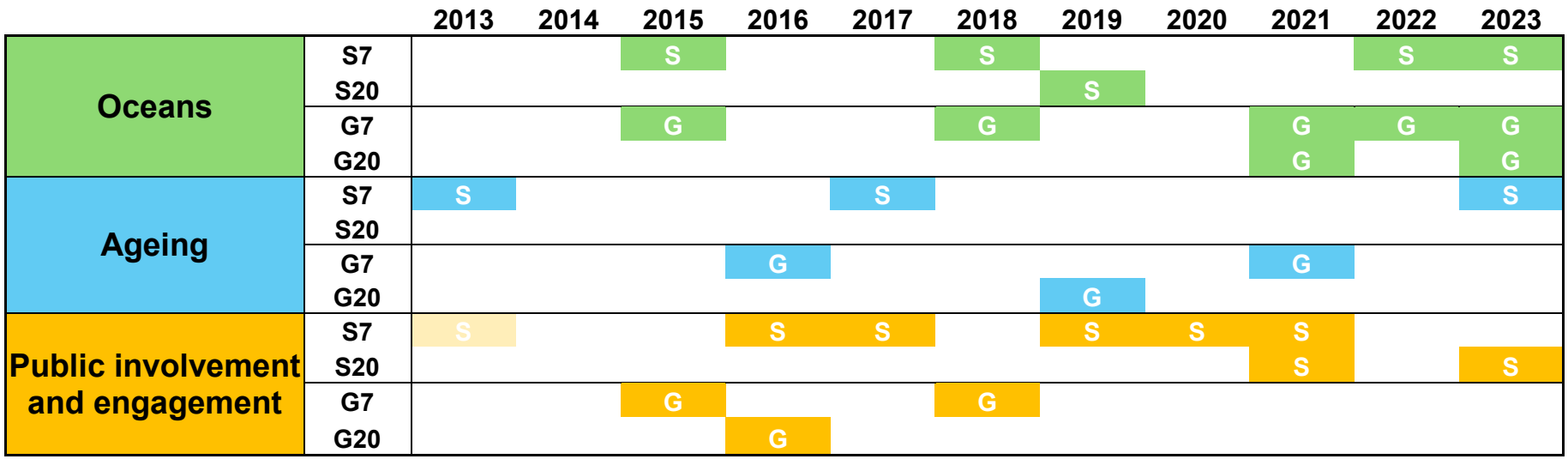
Based on this format, the following pages visualize the trends observed for each theme across the S- and G-statements.

Alignment between S/G7 and S/G20 discussions

Driven by the overlap in both members and shared global challenges, there are many connections between the S7/G7, and S20/G20 processes.

While we do observe some differences, we have approached these two forums as being part of a single connected global discussion – leading us to combine the outputs in each year (e.g. S7 + S20, and G7 + G20) and review them as a single source.

We have included three illustrative themes below, where we have split the data between the two forums to show the differences and similarities, but all further tables in this study combine S7 and S20, and G7 and G20 data.



Environment

		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Oceans	S			S			S	S			S	S
	G			G			G			G	G	G
Biodiversity	S	S		S		S	S		S	S	S	S
	G								G	G	G	G
Climate Change	S			S	S	S	S	S	S	S	S	S
	G	G	G	G	G	G	G	G		G	G	G
Food Systems	S	S		S		S	S	S	S	S	S	S
	G	G		G	G	G	G	G	G	G	G	G
Polar Science	S						S	S			S	
	G											
Water Systems	S	S		S		S					S	
	G				G				G			

Observed trends:

- Environment themes are a major feature of both S- and G-Statements, led by **Climate Change** and **Food Systems** which represent consistent, major themes across the sample period.

- Over the sample period, the themes of **Climate Change**, **Food Systems**, **Biodiversity** and **Oceans** have begun to merge into a single connected set of themes which appear consistently together across statements. This collective presence was led by the former two themes in the 2010s, and joined by the latter two themes into the 2020s.

- The consistent engagement with many Environment themes presents a challenge when identifying correlations between S- and G-Statements, but the data for **Biodiversity** and **Oceans** shows that S-Statement focus precedes the sustained G-Statement mentions in subsequent years, indicating a potential feed-through from S-Statement mentions.

- Engagement with the themes of **Polar Science** and **Water Systems** remain more sporadic, with no obvious correlation between the timing and intensity of S-Statement and G-Statement mentions.

- Across the full sample period, we see an increasing intensity across a range of Environment themes. We note that the broad spike of intensity seen in 2015 may be linked to the launch of the Paris Agreement on Climate Change, and the Sustainable Development Goals in that year.

Health

		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Covid-19	S								S	S	S	S
	G								G	G	G	G
Ageing	S	S				S						S
	G				G			G		G		
One Health and Zoonoses	S	S		S						S	S	
	G			G	G		G	G	G	G	G	G
Diagnostics and Surveillance	S	S		S	S	S			S	S	S	S
	G	G	G	G					G	G	G	G
Anti-Microbial Resistance	S	S		S		S		S		S	S	
	G	G	G	G	G	G	G	G	G		G	G
Pandemic Preparedness	S					S			S	S	S	
	G	G	G	G	G	G	G		G	G	G	G
Health Data and Informatics	S							S	S	S	S	S
	G									G		G
	S			S	S	S				S		S

Health Equity and Access	G		G	G	G	G	G	G	G	G	G	G
Neuroscience	S				S	S						
	G				G							
Neglected Tropical Diseases	S			S								
	G			G	G							

Observed trends:

- A core group of Health themes feature regularly in both S- and G-Statements across the sample window, and there is a broad surge in mentions across both statement populations from 2020 onwards, driven by the response to **Covid-19**.

- The themes of **One Health and Zoonoses**, **Anti-Microbial Resistance** and **Health Equity and Access** are all commonly featured in G-Statements across the sample window, reinforced by regular mentions in S-Statements.

- In particular, **Health Equity and Access** is notable for the consistency and intensity of G-Statement focus across the sample window, despite only periodic mentions in S-Statements – suggesting this topic has firmly captured the attention of policymakers.

- **Ageing** is a periodic theme across both S- and G-Statements, but without any apparent synchronicity – suggesting that S-Statements are not needed for G-Statement engagement on the topic, with focus likely driven by wider factors such as host nation priorities or external political interest.

- The data shows that the theme of **Neglected Tropical Diseases** is an infrequent feature of both S- and G-Statements, but does appear to show a correlation between the two when it appears – with a major mention in the 2015 S-Statements followed by two years of major mentions in G-Statements (2015 and 2016) before the topic fades from prominence.

- Other themes appear not to have the priority for G-Statements, with major mentions of Neuroscience in the 2016 and 2017 S-Statements being matched only by a temporary, minor mention in G-Statements in that period.

Socioeconomic Issues

		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Energy	S	S								S	S	S
	G	G	G	G	G	G	G	G	G	G	G	G
Sustainable Development	S	S			S	S		S	S	S	S	S
	G	G	G	G	G	G	G		G	G	G	G
Cultural Assets and Heritage	S					S			S			S
	G				G	G				G	G	
Poverty and Economic Growth	S					S	S	S	S	S	S	S
	G	G	G	G	G	G	G	G	G	G	G	G
Population Growth	S	S				S			S	S	S	
	G											
Disaster Resilience	S	S			S	S						
	G				G		G					G

Observed trends:

- Several socioeconomic themes are perennial features in G-Statements across the sampling window, including **Energy**, **Sustainable Development** and **Poverty and Economic Growth**.

- Notably, for all three of these themes, G-Statement focus is far more intense and consistent than in S-Statements, suggesting a weaker relationship between S- and G-Statement activity around these themes.

- However, this does appear to have shifted since 2020 and beyond with more major mentions of these three topics in S-Statements, more closely mirroring the intensity of G-Statement focus.

- The theme of **Disaster Resilience** appears as a more niche topic, with periodic mentions. The pattern of these mentions suggests a responsive relationship between S- and G-Statements.

- In other examples, repeated S-Statement focus on the theme of **Population Growth** does not appear to transfer into G-Statement mentions, and for the limited appearances of **Cultural Assets and Heritage** as a theme we see G-Statement mentions precede S-Statement mentions – potentially a demonstration of G-Statements responding to external drivers and events independently of S-Statements.

Science System

		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Data sharing and Open Access	S				S	S	S	S	S	S	S	S
	G	G			G	G	G	G	G	G	G	G
Interdisciplinarity	S				S		S	S	S	S	S	S
	G									G		
International Scientific Collaboration	S	S		S	S	S	S		S	S	S	S
	G				G	G	G	G	G	G	G	G
Academia-Industry Partnerships	S	S		S		S		S	S	S	S	
	G				G	G						
Researcher Assessment	S				S			S				
	G											
R&D Careers and Workforce	S				S				S	S	S	
	G				G	G	G	G		G	G	G
Intellectual Property Rights	S					S						
	G		G		G	G	G		G	G		
	S			S	S	S		S	S	S	S	

R&D Funding	G				G	G			G	G	G	G

Observed trends:

- **International Scientific Collaboration** is a perennial theme across both S-Statements and G-Statements, and it clearly resonates as a priority for both policymakers and scientific experts - as might be expected within a forum focused on global cooperation.

- For themes including **Data Sharing and Open Access**, **R&D Careers and Workforce** and **R&D Funding**, the data indicates a strong connection between S- and G-Statements, with focus appearing in clusters.

- In contrast, themes such as **Interdisciplinarity** and **Academic-Industry Partnership** do not appear to reach the threshold of priority for the G-Statements, despite sustained mentions in S-Statements across many years.

- Themes such as **Intellectual Property Rights** are far more commonly represented within G-Statements compared to S-Statements, while the theme of **Researcher Assessment** has yet to be matched by meaningful G-Statement engagement despite repeat S-Statement mentions.

- Overall, Science System themes have become much more commonplace across S- and G-Statements from 2016 onwards, suggesting a growing awareness among policymakers of the factors underpinning scientific excellence.

Science and Society

		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Trust in Science	S					S		S	S	S		
	G						G	G	G	G		
Information Security	S						S	S	S	S	S	S
	G				G	G	G	G		G		
Equity, Diversity and Inclusion	S				S		S	S	S	S	S	S
	G				G	G	G	G	G	G	G	G
Governance and Standards	S	S				S	S	S	S	S	S	
	G	G			G	G	G			G		G
Evidence-informed Policy	S	S				S		S	S	S		S
	G				G		G			G		
Science Literacy	S	S		S	S		S	S	S	S	S	S
	G	G			G	G	G	G	G			
Safe and Ethical Research	S				S		S	S	S	S		
	G											
	S	S			S	S		S	S	S		S

Public Involvement and Engagement	G			G	G		G					
Global Equity and Capacity-building	S	S		S	S	S	S		S	S	S	S
	G		G	G	G	G			G	G	G	

Observed trends:

- Science and Society themes have become commonplace across S-Statements since 2016, with mentions appearing to peak during the pandemic response, where themes such as **Trust in Science** and **Evidence-informed Policy** came to the foreground.

- The breadth of G-Statement focus has somewhat lessened in 2022 and 2023, but further data would be needed to understand if this is a sustained trend.

- The transfer into G-Statement focus is mixed – for themes including **Trust in Science**, **Equity, Diversity and Inclusion**, and **Global Equity and Capacity-building** we see a consistent correlation with S-Statement mentions, whereas this transfer into G-Statement focus is not seen for the repeated mentions of **Safe and Ethical Research** in S-Statements.

- **Public Involvement and Engagement** had a high point in G-Statement activity in the mid-2010s, but has since fallen back despite continued promotion in S-Statements throughout the 2020s. Other themes, including **Science Literacy,** appear to show a period of increased focus in G-Statements, which is then not sustained in the long run.

Emerging technology

		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Quantum technologies	S					**S**	**S**		**S**			
	G										**G**	
Robotics	S							**S**	**S**			**S**
	G											
Artificial Intelligence (AI)	S						**S**	**S**	**S**	**S**	**S**	**S**
	G				**G**	**G**	**G**	**G**	**G**	**G**	**G**	**GI**

Observed trends:

- Among the major themes around Emerging Technologies, only Artificial Intelligence appears to have transferred into substantial G-Statement focus. Themes such as quantum technologies and robotics have not.

- Notably, G-Statement mentions of Artificial Intelligence appear to precede S-Statement mentions, suggesting that G-Statements were faster than S-Statements to react to the wider discourse on this theme, or that this is an unusually rapidly developing topic.

Conclusions

Looking across the 42 themes explored in this analysis, we observe many correlations between S-Statement and G-Statement focus. While our data sources prevent us exploring any causative relationship, we see examples of themes which appear in S-Statements, and also appear as G-Statement priorities in the same year.

Across the data, we see four broad modes of time-based directional relationship for the 42 themes identified:

1) **S and G in parallel:** In many areas, including across **Environment**, **Health** and **Science System** topics, we see S-Statement themes being mirrored by deep and sustained engagement in the G-Statements. This suggests that these high priority S-Statement themes are firmly embedded in the policymakers' agenda. Many of these common priorities appear to be driven by external factors, including crises (e.g. **Health** and **Science System** themes linked to **Covid-19**) and high public salience (e.g. **Environment** themes linked to **Climate Change**).

2) **S precedes G:** We see other themes where S-Statements identify them as important first, and possibly drive the attention of policymakers towards an issue. These tend to be themes where public salience is less of a driver, including **Public Involvement and Engagement** and **Neglected Tropical Diseases**.

3) **S not translating to G:** We see a range of themes where focus within S-Statements does not appear to translate into focus in G-Statements. Examples are found across the six groupings and include themes such as **Researcher Assessment** and **Neuroscience**. These themes appear to hold higher priority among the scientific community compared to among policymakers, or may represent issues where the role for global policymaking and action is not yet sufficiently clear. We recognize that preparation of S- and G-Statements involves extensive collaboration and deliberation between science academies and governments. Even if an issue raised in the S-Statement is not explicitly reflected in the G-Statement, it does not imply that it was overlooked; such issues are often considered during behind-the-scenes discussions or in subsequent dialogues.

4) **G precedes S:** Finally, we see a small number of topics where G-Statement focus is more intense than, or precedes, S-Statement focus – including major policy topics such as **Poverty and Economic Growth**, emerging themes such as **Artificial Intelligence**, and subjects such as **Intellectual Property Rights.**

These four modes of time-based directional relationship for the 42 themes identified reflect the complexity of the G-Statement process. We recognize that while science academies provide essential, evidence-based input to G-Statements, they are one of several important contributors. Policymakers also draw on insights from economic bodies, civil society organizations, private sector leaders, and international institutions to develop well-rounded, actionable policies that address diverse global challenges.

Leading or feeding appetite?

The interplay between S and G forums means that the S-Statements play a dual role – both acting as a horizon-scanning exercise to highlight emerging themes, but also responding to wider signals from policymakers and public discourse on the salient topics of the moment that require evidence-informed policy decisions.

We see both roles at play across the modes of influence set out above. In particular, Mode 4 ('**G precedes S**') raises a range of questions about how S-Statements can best serve the demand observed in G-Statement focus areas. For example, the theme of **Poverty and Economic Growth** is a consistent and dominant G-Statement theme, including regular mentions of innovation-led growth (e.g. 2016 G20 Innovation Action Plan). Yet S-Statement engagement is typically light and uncorrelated with G-Statement activity on these topics. This could be because not all science academies have expertise in social sciences and humanities.

A similar pattern is seen for the theme of **Energy**, where G-Statement engagement is deeply consistent across the sample window, but S-Statement inputs are sporadic. Across both these example themes, the disparity between S-Statement and G-Statement focus appears to have narrowed in recent years, perhaps spurred by the elevated focus on energy policy.

We also see a variant of Mode 4 within the Emerging Technology themes, where mentions of **Artificial Intelligence** appear in G-Statements ahead of the S-Statements. This may suggest that S-Statements are responding to policymaker appetite around this theme, rather than driving it onto the policy agenda. Potentially mirroring this relationship, **Space Technologies** were mentioned in the 2023 G-Statements but did not feature as a significant theme in the S-Statements within our sample window.

Beyond the themes identified in the framework, it is notable that within the period 2013-2023, **Security** is a common theme across G-Statements, but rare in S-Statements despite the role of science and technology in global security and stability. This may reflect this type of advice reaching policymakers through other contributors, or a conscious decision to separate this topic from S-Statements.

Where next for S-Statements?

Our data shows widespread correlation between S-Statement and G-Statement activity. Many themes would be categorized within Modes 1 or 2 – **S and G in parallel** and **S precedes G** – as we set out above.

The data points towards S-Statements being effective across themes of different types, including those where S-Statement inputs are reinforced by high public interest (e.g. **Climate Change** or **Anti-Microbial Resistance**), but also themes which have a low public profile and might not carry political weight without intervention from the academies (e.g. many Science System themes, such as **Open Access**).

Given the complex nature of the policymaking process around the G7 and G20, the level of coherence between S-Statements and G-Statements is notable. In many instances, it is clear that the S-Statements are responding rapidly and repeatedly to the issues that matter – and should matter - to policymaking at any given moment, suggesting that current processes are largely succeeding in steering the scientific expertise of the academies towards salient topics.

Looking across the four Modes we have set out, we see that possible actions needed differ:

- **Mode 1** – these themes are well-served in the current system and appear to resonate with both policymakers and the academies. They are highly likely to feature in G-Statements, even with minimal effort into raising their profile. However, continued S-Statement engagement with these themes remains beneficial.

- **Mode 2** – these themes likely require targeted S-Statement focus to bring them into the policymaking agenda. Perhaps more than any of the other modes, Mode 2 demonstrates that science academies bring emerging issues to the forefront of G7 and G20 governments before these issues are recognized in policy initiatives.

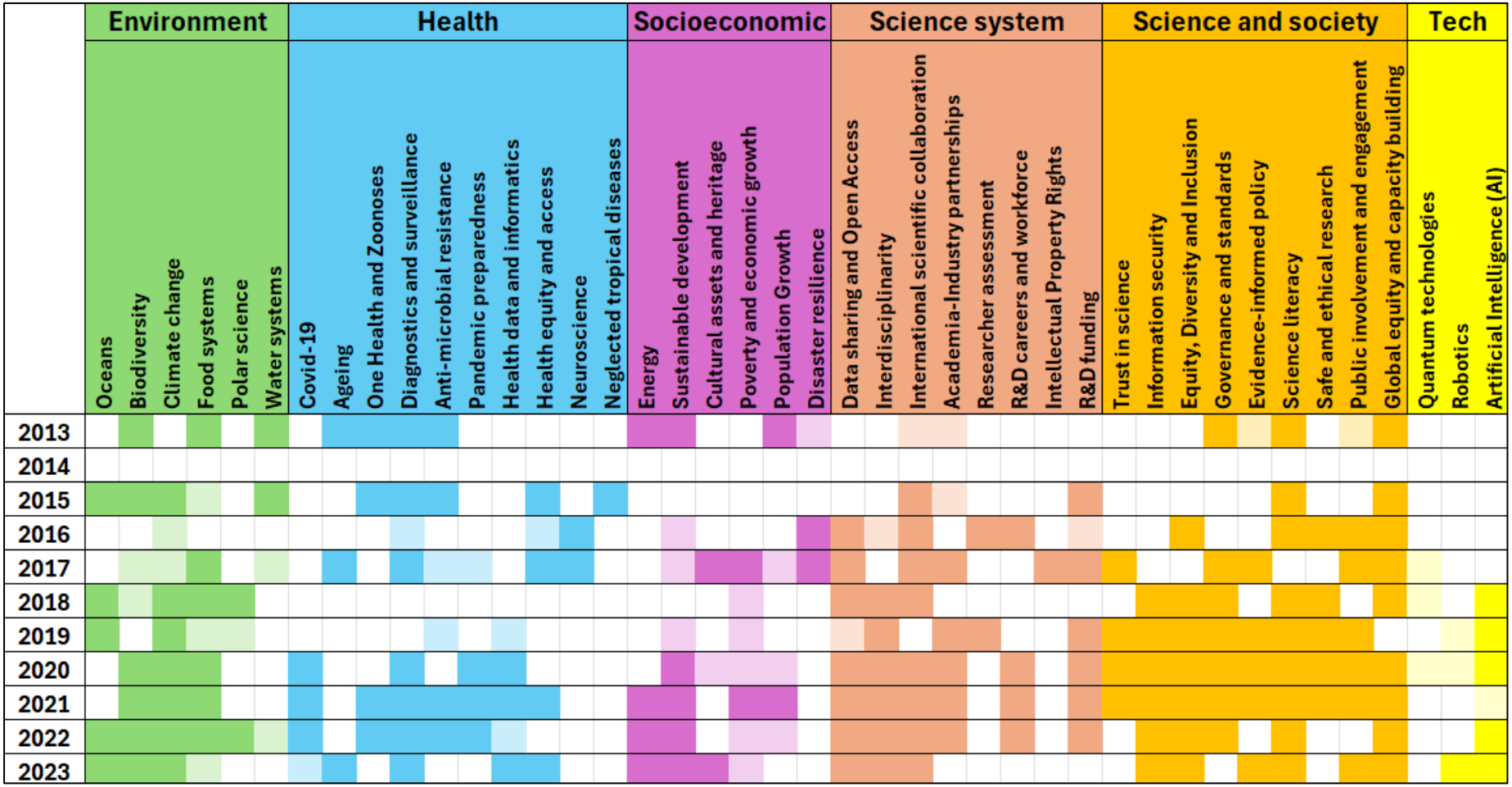
- **Mode 3** – these themes are not generating a connection between S- and G-Statement activity, often despite successive mentions and exploration in S-Statements. No single solution exists to shift a theme out of this mode, but possible actions could include: 1) strategically timing S-Statement activity to make the most of windows of opportunity, 2) seeking to attach the theme to higher profile issues to benefit from the clustering effect, 3) seeding more appetite among policymakers through wider relationship building. As noted previously, even if an issue raised in the S-Statement is not explicitly reflected in the G-Statement, it does not imply that it was overlooked; such issues are often considered during behind-the-scenes discussions or in subsequent dialogues.

- **Mode 4** – these themes represent under-served demand from policymakers and there may be opportunities to build more feedback loops into the development of S-Statements, such as further monitoring of emerging themes across successive G-Statements to identify topics where scientific input may be useful. This may require S-Statements to engage with newly emerging themes even while the scientific consensus is still forming, but this could be openly acknowledged and would ensure that a platform was established for further engagement with policymakers on that theme.

Looking ahead, the academies will be facing a future where the number of themes 'active' in any particular year has grown substantially, meaning that expertise and bandwidth are spread more thinly. Linked to this, we see greater the clustering of some topics – such as those linked to **Climate Change**, **Biodiversity** and **Food Systems** – which are increasingly appearing together as an interwoven set of topics. This further increases demand on the S-Statements for breadth, as well as depth.

In the face of this, the academies are well-positioned to use their scientific credibility to continue to act as a major influence on policy outcomes of the G7 and G20 summits. Rising demand for their input will mean a growing need to strategically balance capacity, especially across the horizon-scanning and responsive roles we have previously set out. As has always been the case – timing, persistence and a willingness to accommodate the human-centered nature of the policymaking process, will all be key to continued success.

Annex 1 – Overview of S-Statement themes by year



Annex 2 – Document Library

The following G-Statements and S-Statements were reviewed for this analysis.

G-Statements, 2013 – 2023

2013	**G20 (Russia)**	G20 Leaders' Declaration
	G8 (UK)	G8 Leaders Communiqué G8 Lough Erne Declaration Open Data Charter Open Data Charter: Annex G8 Action Plan Principles to Prevent the Misuse of Companies and Legal Arrangements
2014	**G20 (Australia)**	G20 Leaders' Communiqué G20 Leaders' Brisbane Statement on Ebola
	G7 (EU)	Brussels G7 Summit Declaration G7 Leaders' Communiqué on Foreign Policy
2015	**G20 (Turkey)**	G20 Leaders' Communiqué G20 Statement on the Fight Against Terrorism Antalya Action Plan
	G7 (Germany)	Leaders' Declaration Annex to the Leaders' Declaration
2016	**G20 (China)**	G20 Hangzhou Summit communiqué G20 Blueprint on Innovative Growth G20 New Industrial Revolution Action Plan G20 2016 Innovation Action Plan G20 Digital Economy Development and Cooperation Initiative Hangzhou Action Plan
	G7 (Japan)	G7 Ise-Shima Leaders' Declaration G7 Ise-Shima Principles for Promoting Quality Infrastructure Investment

		G7 Ise-Shima Vision for Global Health G7 Guiding Principles for Capacity Building of Women and Girls: Towards Sustainable, Inclusive and Equitable Growth and Peace G7 Action to Fight Corruption G7 Action Plan on Countering Terrorism and Violent Extremism G7 Principles and Actions on Cyber
2017	**G20 (Germany)**	G20 Leaders' Declaration: Shaping an Interconnected World Hamburg G20 Leaders' Statement on Countering Terrorism
	G7 (Italy)	G7 Taormina Leaders' Communiqué G7 People-Centered Action Plan on Innovation, Skills and Labor G7 Roadmap for a Gender-Responsive Economic Environment G7 Taormina Statement on the Fight Against Terrorism and Violent Extremism
2018	**G20 (Argentina)**	G20 Leaders' Declaration: Building Consensus for Fair and Sustainable Development
	G7 (Canada)	The Charlevoix G7 Summit Communiqué Charlevoix Commitment on Equality and Economic Growth Charlevoix Commitment on Innovative Financing for Development Charlevoix Common Vision for the Future of Artificial Intelligence Charlevoix Declaration on Quality Education for Girls, Adolescent Girls and Women in Developing Countries Charlevoix Commitment to End Sexual and Gender-Based Violence, Abuse and Harassment in Digital Contexts Charlevoix Commitment on Defending Democracy from Foreign Threats Charlevoix Blueprint for Healthy Oceans, Seas and Resilient Coastal Communities
2019	**G20 (Japan)**	G20 Osaka Leaders' Declaration G20 Osaka Leaders' Statement on Preventing Exploitation of the Internet for Terrorism and Violent Extremism Conducive to Terrorism (VECT)
	G7 (France)	G7 Leaders' Declaration Declaration on Gender Equality and Women's Empowerment Sahel Partnership Action Plan Biarritz Declaration for a G7 and Africa Partnership Annex 1: Promoting Women's Entrepreneurship in Africa Annex 2: Digital Transformation in Africa

		Annex 3: Transparency in Public Procurement and the Common Fight against Corruption
2020	**G20 (Saudi Arabia)**	Leaders' declaration
		G20 Leaders' Side Event: Pandemic Preparedness and Response
	G7 (USA)	G7 leaders' statement
2021	**G20 (Italy)**	G20 Rome Leaders' Declaration
	G7 (UK)	Carbis Bay G7 Communiqué
		G7 Carbis Bay Health Declaration
		G7 2030 Nature Compact
		G7 2021 Open Societies Statement
		G7 2021 Research Compact
2022	**G20 (Indonesia)**	G20 Bali Leaders' Declaration
	G7 (Germany)	G7 Statement of Support for Ukraine
		Annex - G7 Statement of Support for Ukraine
		G7 Chair's Summary: Joining Forces to Accelerate Clean and Just Transition towards Climate Neutrality
		2022 Democratic Resiliencies Statement
		G7 Leaders' Statement on the Missile Attack on a Shopping Mall in Kremenchuck
		G7 Statement on Global Food Security
		G7 Statement on Climate Club
		G7 Leaders' Communiqué
2023	**G20 (India)**	G20 New Delhi Leaders' Declaration
	G7 (Japan)	G7 Hiroshima Leaders' Communiqué
		G7 Clean Energy Economy Action Plan
		G7 Leaders' Statement on Economic Resilience and Economic Security
		G7 Leaders' Hiroshima Vision on Nuclear Disarmament
		G7 Leaders' Statement on Ukraine

S-Statements, 2013 - 2023

2013	**S8+ (UK)**	Driving Sustainable Development: the role of Science, Technology and Innovation Drug Resistance in Infectious Agents – A Global Threat to Humanity
2014	**-**	*No statements due to Russian presidency being suspended*
2015	**S7 (Germany)**	Future of the Ocean: Impact of Human Activities on Marine Systems Infectious Diseases and Antimicrobial Resistance: Threats and Necessary Actions Neglected Tropical Diseases
2016	**S7+ (Japan)**	Nurturing Future Scientists Understanding, Protecting, and Developing Global Brain Resources Strengthening Disaster Resilience is Essential to Sustainable Development
2017	**S7 (Italy)**	The challenge of neurodegenerative diseases in an aging population Cultural heritage: building resilience to natural disasters New economic growth: the role of science, technology, innovation, and infrastructure
	S20 (Germany)	Improving Global Health
2018	**S7 (Canada)**	Realizing our Digital Future and Shaping its Impact on Knowledge, Industry, and the Workforce The Global Arctic: The Sustainability of Communities in the Context of Changing Ocean Systems
	S20 (Argentina)	Food and Nutrition Security: Improving Soils and Increasing Productivity
2019	**S7 (France)**	Science and trust Citizen science in the Internet era Artificial intelligence and society
	S20 (Japan)	Threats to Coastal and Marine Ecosystems, and Conservation of the Ocean Environment
2020	**S7 (USA)**	Basic Research Digital Health and the Learning Health System Global Insect Declines and the Potential Erosion of Vital Ecosystem Services The Critical Need for international Cooperation during COVID-19 Pandemic
	S20 (Saudi Arabia)	Foresight: Science for Navigating Critical Transitions Digitalization Joint Statement in response to COVID-19

		Science 20 Statement to G20 Leaders on the COVID-19 Pandemic
2021	**S7 (UK)**	Data for international health emergencies: governance, operations and skills Reversing biodiversity loss – the case for urgent action A net zero climate-resilient future – science, technology and the solutions for change SSH7: Community engagement SSH7: Education, skills and employment SSH7: Trust, transparency and data gathering SSH7: Inequalities and cohesion SSH7: Fiscal policy
	S20 (Italy)	Pandemic preparedness and the role of science SSH20: Crises: economy, society, law, and culture. Towards a less vulnerable humankind
2022	**S7 (Germany)**	The Need for a One Health Approach to Zoonotic Diseases and Antimicrobial Resistance Decarbonisation: The Case for Urgent International Action Ocean and Cryosphere: The Need for Urgent International Action Antiviral Drugs: Increasing Preparedness for the Next Pandemic
	S20 (Indonesia)	Recover Together, Recover Stronger
2023	**S7 (Japan)**	Restoration and recovery of the ocean and its biodiversity Addressing systemic risks in a changing climate: Science and technology in support of cross-sectoral decision-making Delivering better health and well-being of older people through wisdom sharing and innovation
	S20 (India)	Transformative Science for Sustainable Development

iap SCIENCE HEALTH POLICY
the interacademy partnership

CultureBase Consulting

Culture Base Consulting
info@culturebase-consulting.co.uk
https://culturebase-consulting.co.uk/

CultureBase supports clients to improve research culture - Our mission is to improve how research is done, through sharing our expertise with organisations that perform, fund or support research.

IAP Secretariat - Washington DC
The US National Academies of Sciences,
Engineering and Medicine
500 Fifth Street, NW - Washington, DC, 20001, USA
secretariat@iapartnership.org

IAP Secretariat - Trieste
The World Academy of Sciences (TWAS)
ICTP Campus - Strada Costiera 11
34151, Trieste, Italy
iap@twas.org

Twitter/X and Mastodon: @IAPartnership
www.linkedin.com/company/
interacademypartnership
https://tinyurl.com/IAPyoutube
www.interacademies.org