

GIST Seminar on Science Advice
GRIPS, Tokyo, 17 Dec 2012

Chief Scientific Advisers: a UK model for scientific advice to government

Robert Doubleday
Director, Centre for Science and Policy
University of Cambridge
Email: rvld2@cam.ac.uk



Outline

- UK system of Chief Scientific Advisers (CSAs)
 - w Background and current questions
 - w Internationalisation
- Functions performed by departmental CSAs
- Functions performed by the Government CSA
- How the role, responsibility and authority of CSAs varies
- Tensions in current expectations of CSAs
- Analytical approaches from science and technology studies
- Conclusions

UK CSAs

- Dates back to World War Two – focused on military S&T
- Zuckerman appointed first Gov't CSA in 1964
- Following 30 years MoD CSA more senior, GCSA role varied over time – acting as adviser to Prime Minister
- GCSA become more important in 1990s (Bob May)
 - w 1993 White Paper – *Realising Our Potential*
 - w BSE ('Mad cow disease') – publication of Guidelines 1997
- From 2000 'CSA in every department' became policy

Official UK science policy responses

- Guidelines on scientific advice published (1997)
 - w Science advice should be open to public scrutiny
 - w Systematic efforts needed to engage wide range of scientific inputs (not just usual sources)
 - w Framing of question recognised as important part of process
 - w Need to characterise and communicate uncertainty as part of scientific advice
 - w Importance of involving public voices in scientific advisory process – widening range of evidence inputs
 - w Politicians to justify decisions in the light of scientific advice

Official UK science policy responses

- A Chief Scientific Adviser in every Gov't department (2000)
 - w External appointment for fixed term
 - w CSAs act as guarantee of 'independence' of scientific advice
 - w CSAs links government to sources of expertise external to government
 - w CSAs occupy a senior position – able to 'challenge' policy from within



Sir John Beddington



Prof John Perkins BIS



Prof Rod Smith DfT



Prof Jeremy Watson CLG



Prof Chris Whitty DFID



MI5



Prof David Mackay DECC



Prof Vernon Gibson MoD



Prof Dame Sally Davies DH



Prof Bernard Silverman Home Office



Prof Ian Boyd Defra



Prof John Harries Wales



Prof Muffy Calder Scotland



Prof David Clary FCO



Carole Willis DfE



Dr Bill Gunnyeon DWP



Patrick McDonald HSE



Prof Peter Freer Smith Forestry C.



Rebecca Endean MoJ



Dr Andrew Wadge FSA



The Civil Service Reform Plan

HM Government June 2012

Wide range of functions performed by CSAs

- Head of Science & Engineering Profession within departments (symbolic → major management duties)
- Oversight of scientific advisory processes (internal and external)
- ‘Node’ connecting internal and external sources of scientific evidence
- Scientific adviser to Ministers, Perm Secretary, policy teams
- Interdisciplinary work with other ‘analysts’ in the dept
 - w Economics, Social Research, Statistics, Operational Research
- Working collectively with CSAs across government

Government Office for Science

- Office of the Government CSA
- Support GCSA in scientific advisory role (often reacting to emergencies)
- Oversight / support scientific advisory processes across government
- Foresight / horizon scanning

Variety across departments

- Internal or external (fixed-term) appointment
- Grade: Perm Secretary, Director General, Director

Job Title	- Pay Band
Deputy Director	- SCS1
Director	- SCS2
Director General	- SCS3
Permanent Secretary	- Perm Sec

Variety across departments

- Internal or external (fixed-term) appointment
- Grade: Perm Secretary, Director General, Director
- Control of research budgets / discretionary budget / no budget
- Major administrative role / no management

Dept	Int/Ext Appointment ³⁸	Seat on Board	FT/PT	Grade	Actual Pay Floor (— Ceiling)	Reports to	Tenure	Control of research budget ³⁹	Additional Posts
BIS	External	No	PT 0.6 FTE ⁴⁰	SCS2	£72,000	Perm Sec	FTC	No	
DCLG	External	No	PT 0.5 FTE	SCS2	£60,000–£64,999	DG	FTC	No	
DCMS	<i>Vacant</i>	<i>Vacant</i>	<i>Vacant</i>	<i>Vacant</i>	<i>Vacant</i>	<i>Vacant</i>	<i>Vacant</i>	<i>Vacant</i>	
DECC	External	No	PT 0.8 FTE	SCS3	£105,000–£109,999 ⁴¹	Perm Sec	Secondment	Partial	
Defra	External	Yes ⁴²	PT 0.8 FTE	SCS3	£135,000–£139,999	Perm Sec	FTC	No	
DfE	Internal	No	FT	SCS2	£85,000–£89,999	DG	Permanent	Yes	Director of Research & Analysis
Dfid	External	No	PT 0.8 FTE	SCS3	<i>Not disclosed</i>	DG	Secondment	Yes	Director of Research & Evidence Division

³⁷ Departmental questionnaires and Civil Service Senior Staff pay information and grades from www.data.gov.uk.

³⁸ As classified by evidence received from the Campaign for Science and Engineering (CASE).

³⁹ See table 5 from GO Science for full details of CSA responsibility for budgets. Where the questionnaires were not clear the GO Science information was used.

⁴⁰ See footnote 94.

⁴¹ This is an approximate salary offered by DECC as they do not publish salaries for secondments.

⁴² Defra have a Management Committee and Supervisory Board rather than a departmental Board.

Dept	Int/Ext Appointment ³⁸	Seat on Board	FT/PT	Grade	Actual Pay Floor (— Ceiling)	Reports to	Tenure	Control of research budget ³⁹	Additional Posts
DfT	External	No	PT 0.6 FTE	SCS2	£31,740–£97,500	DG	FTC	No	
DH	Internal but with significant external experience ⁴³	Yes	FT	SCS3	£225,000–£229,999	Perm Sec	Permanent	Yes	Chief Medical Officer, Chief Medical Adviser, DG Research and Development
DWP	External	No	FT	SCS2	£130,000–£134,999	DG	Permanent	No	Chief Medical Adviser
FCO	External	No	PT 0.4 FTE	SCS3	£49,200	PUS	FTC	N/A	
HMT	Internal	No	PT—no dedicated hours	SCS2	£85,000–£89,999	DG	Permanent	Not specified	Director of Public Spending, Chief Microeconomist
HO	External	No	FT	SCS2	£120,000–£124,999	Perm Sec	FTC	No	
MoD ⁴⁴	External	No	PT 0.8 FTE	SCS3	£112,000	PUS	FTC	Yes	
MoJ	External	No	FT	SCS2	£85,000–£89,999	DG	Permanent	No	Director of Analytical Services

⁴³ See footnote 60 on page 26.

⁴⁴ Exceptionally, the arrangements detailed in this table for the MoD CSA are based on the candidate brief for the new MoD CSA post, MoD: *CSA Candidate Brief*, July 2011.

Tensions - I

- Success as adviser depends on personal rapport
 - w But CSAs not appointed by Ministers – they are civil servants
- May be independent – to advise and challenge
 - w But civil service is already independent, the question of accountability, CSAs informally accountable to scientific community
- May occupy senior administrative / budget holding role
 - w But such corporate responsibility may diminish scope for ‘critical challenge’ role

Tensions - II

- Better thought of a hybrid – acting as node between internal departmental analysis and external sources of evidence
 - w But then CSA role cannot be ‘all things to all men’ - need to make choices
- Important to consider carefully what ‘scientific’ means
 - w Need for interdisciplinarity within departments
 - w Need to collaborate across government
 - w Need to ensure wide range of evidence and acknowledgement of uncertainty

Analytical role for STS

- Analysis beyond ‘honest broker’ - Roger Pielke Jr
- Co-production of scientific advice and political process – Sheila Jasanoff
- Five dimensions for further analysis:
 1. Framing – who sets the questions?
 2. Knowledge – which knowledge counts?
 3. Uncertainty – how is uncertainty characterised and communicated?
 4. Deliberative forums – where are judgements exercised?
 5. Accountability – how is scientific advice held to account?

Conclusions

- CSAs' most valued function is as a networker – breaking down barriers between internal and external evidence
- But being clearer about the value of the CSA also means being clearer about what a CSA cannot be expected to deliver:
 - w Independent 'critical challenge'
 - w Scientific advice across full range of departmental priorities
 - w Senior administration of major departmental functions
- Appropriate support from civil service is critical to success
- Opportunity to learn and reflect about role of CSAs – both nationally and internationally

- 1 Gov't Chief Scientific Adviser
- 2 Business, Innovation and Skills
- 3 Department for Education
- 4 Communities & Local Government
- 5 Environment, Food & Rural Affairs
- 6 International Development
- 7 Department for Transport
- 8 Department for Work & Pensions
- 9 Department of Health
- 10 Energy and Climate Change
- 11 Foreign Office
- 12 Food Standards Agency
- 13 Forestry Commission
- 14 Health & Safety Executive
- 15 Her Majesty's Treasury
- 16 Home Office
- 17 Met Office
- 18 Ministry of Defence
- 19 Scottish Government
- 20 Ministry of Justice
- 21 Welsh Government

Prof Beddington

Prof Perkins
Carole Willis
Aldridge (Interim)
Prof Boyd
Prof Whitty
Prof Rod Smith
Dr Bill Gunnyeon
Prof Sally Davies
Prof Mackay
Prof David Clary
Dr Andrew Wadge
Prof Peter Freer-Smith
Dave Bench
Dr James Richardson
Prof Bernard Silverman
Julia Slingo
Prof Vernon Gibson
Prof Muffy Calder
Rebecca Endean
Prof John Harries

Centre for Science and Policy (CSaP)



- Established by University of Cambridge in 2009
- Purpose: to help government make better use of science in order to deliver better public policy
- Work through building and supporting networks that span government and academia
 - w Research on ‘science policy’

- 
- **Thematic programmes
(events, discussion, experiment)**
 - **Policy fellowships
(building networks)**
 - **Science and policy research
(insight and understanding)**

CSaP Policy Fellowships Programme 2012:
Meetings between new Policy Fellows and researchers

