



IAP Conference on Science Advice

Plenary Discussion Conclusions & Recommendations



Opening Ceremony

Heide Hackman, ICSU

- Science International – series of meetings ICSU, ISSC, TWAS, IAP
- Primary focus on policy for science
- First activity: accord on ‘Open Data in a Big Data World’
- Next: campaign for academies, scientific unions and other organizations to sign up to the accord
- Parallel capacity building initiative for data scientists in Africa



Conference Programme

- Opening

DAY 1

- Keynotes Gluckman, van der Meer
- Panel I: Science advice ecosystems
- Panel II: Science Advice for disasters and emergencies
- Panel III: Synthetic biology

DAY 2

- Panel IV: Country readiness for science advice
- Keynote McGlade
- Panel V: Politics and the media

04/03/2016



Opening Ceremony

Minister Pandor, Minister of Science and Technology

- Confirmed strong relationship between SA Ministry of Science and Technology and ASSAf
- ASSAf providing science advice for 20 years and has grown to become a significant component of the South Africa science advice ecosystem
- Aim to get research spending up to 1.5% of GDP
- Needs for gender equity in all academies – aim for 50% representation of men and women

Setting the Scene – Keynote presentations

Sir Peter Gluckman

- Science and policy are fundamentally different cultures
 - Policymakers must weigh many factors besides science
 - Need for science to inform policy: scientists to ‘translate’ findings
 - Need to avoid hubris and build trust, clarify what we don’t know
 - Policymaking process is messy, with many inputs and viewpoints
 - Science is non-normal: non-linear, uncertainties, disputed values
 - Differentiate formal and informal mechanisms of science advice
 - One size does not fit all
 - Differentiate honest broker (desired) from advocate
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Setting the Scene – Keynote presentations

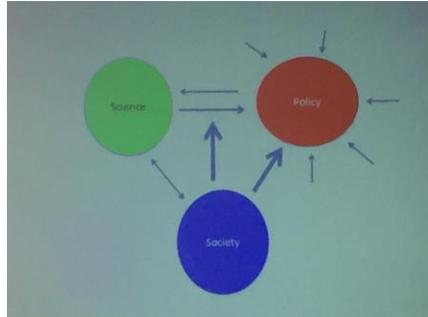
Jos van der Meer

- Emerging European mechanism for advice: Science Advice for Policy by European Academies (SAPEA)
 - Need to create two-speed process – for rapid responses (up to 6 months) and longer term deliberation and reporting (1-3 years)
 - High-level committee of 7 prominent scientists – but composition needs attention. 0 medics, 1 social scientist
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Report - Discussion

- How do we measure impact? By repeat demand
- All policy decisions involve a degree of risk – but risk is perceived in different ways by different communities

Emergence of boundary roles between scientists, policymakers and society. May be individuals, committees, etc.



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Panel I: Science Advice Ecosystem

Flavia Schlegel – Howard Alper – Khotso Mokhele – Thomas Zeltner – Tolu Oni

Moderated by Jimmy Volmink

- INGSA, ICSU and UNESCO are developing ‘principles of science advice’. Possible role for engagement by IAP
- Important to support the advance of women in science, advance young scientists
- Indigenous knowledge, e.g. STIC regular reports on S&T landscape in Canada
- Advisory councils etc should have significant representation of women.
- Need for inclusion of social sciences
- Need for training in science advice and reward mechanisms for young scientists
- Scientists should work to understand society

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Panel I: Discussion

- Not valid to import mechanism from countries with long history of science advice compared to developing countries
- In developing countries with recent science cultures, even committed science advocates can become frustrated if they try to use mechanisms used in developed world
- ‘Translating’ science means using clear language and concepts, not ‘dumbing down’

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Panel II: Science Advice in Times of Disasters/ Emergencies

Oywale Tomori – Coleen Vogel – R.B. Singh – Bernard Slippers – Virginia Murray
Moderator: Peter Gluckman

- Importance of preparedness and early warning
- To build trust, science must dialogue with the public all the time
- Science advice should be locally relevant (e.g. Nigeria compared to Sierra Leone)
- Multi-stakeholder forum involved diverse communities and had real impact (drought in South Africa in 1990s). Not sustained, unfortunately
- S&T (e.g. GIS) can help prediction and warning.
- Inform communities on how to react
- Academies of young scientists can provide the platform and structure for disaster preparedness.
- Sendai Framework on Disaster Risk Reduction a strong model of science for policy

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Panel II: Discussion

- Need for big data availability to inform science advice
- Science advice not just about giving answers, also stimulating debate
- Engagement/preparation outside of emergencies improves responses to emergencies
- Need to curb opportunistic demands for new science funds after major disasters
- Need for post-disaster review of accuracy of advice
- Chance for IAP and member academies to get involved in UNISDR S&T Partnership

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Panel III: Science Advice in the International Arena with a Special Focus on Synthetic Biology

F.G. Boliva-Zapata – Ernst-Ludwig Winnacker – Rees Kassen – Keymanthri Moodley
Moderator – John Hildebrandt

- Science is moving quickly, but regulations are not keeping up
- Distinguish GMO from synthetic biology for public/policymaker?
- Many synthetic biology practitioners outside academia so difficult to ensure responsible and ethical research
- Public has reacted negatively to GMOs. Can we avoid the same with new synthetic biology products / organisms?

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Panel III - continued

- Need for code of conduct especially for informal community
- Cartagena Protocol – does it need to go beyond ‘organisms’ to off-the-shelf ‘DNA devices’?

Panel III - discussion

- Can we use the ‘hackers’ to control the ‘spammers’ – engage with the DIY community
- Communities operate in a mentor/mentee relationships. Need to engage with these communities to flag potential misuse

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Panel IV: Country Readiness for Science Advice

O. Phanraksa – M.N. Hounkonnou – Kurt Lambeck – Margaret Hamburg

Moderated by Detlev Ganten

- Thailand: aims for high-income by 2026. High-level STI panel appointed
- Impact of science advice depends on the level of scientific development in a country. In many African countries, the advice framework is minimal
- Academies of science natural vehicles for science advice – if they exist
- Advice provided in a short time-scale can be limited - "if you want to know more, please come back to us"
- US National Academies established to provide advice and have thus have reached into policy-making and practice in US and other countries.
- Need to engage wide range of stakeholders, including the public; address conflicts of interest

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Panel IV: Discussion

- Need to find a way to speak directly to the minister
- Much of work at academy-level is done with departments and agencies. Less turnover – opportunity to build relationships. Work closely with government/agencies to scope out work of academy
- Scientist-policymaker divide often starts at university level. Can academies work with undergrads to help bridge the gap?
- Public engagement important – provide information and education to public which in turn influences receptiveness of government

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Keynote lecture

Jacqueline McGlade, UNEP

- UNEP: deep, robust, and sometimes real-time data in demand by policymakers
- ‘Web intelligence’ can provide governments and others with up-to-date information from news feeds, social media, scientific publications, etc.
- Small countries rely on UN as a ‘civil service’.
- UNEP has engaged ~1,200 scientists into its committees; each assessment goes through a 3-stage peer review.
- Enormous amount of open data made available by >100 governments. Can be analysed, re-analysed, add value.
- Million Voices (citizen scientists) want to get involved in SDGS, e.g. via social media.
- Academic community can help at local level and regional level
- UN Environmental Assembly, with scientists in major groups (May 2016): Needs greater representation of scientists in the major groups.

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Keynote lecture - Discussion

- How do science academies help the UN in achieving the UN SDGs?
- Best scientists should feed into reports, make reports more credible
- Many national academies fed experts into UNEP's 1,200 scientists. More needed: Call for experts is open.
- Developing trust with member states to submit data; open access is critical for providing information to the public.
- Science community is not a UN stakeholder, it is a tool.
- All UN organizations should have a chief statistician *and* a chief scientist.
- Aim to identify and answer cross-cutting SDG questions – IAP can help.

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Panel V: Interplay between Science Advice, Politics and the Media

Linda Nordling – David Mair – Charles Weijer – Sameh Soror – Bruce Alberts.

Moderated by Robbert Dijkgraaf

- New technologies; competition for print media; 'juniorization' of the newsroom; but few newspapers have science pages
- Information from our research institutions should be made available to the public for wide/open discussion.
- Think about why we communicate – to give advice or to lobby/promote our findings/research field?
- Special role for humanists and social scientists to better engage/inform the public.
- Aim to educate in scientific reasoning/debate from age 5.
- Model of AAAS fellows one model to involve scientists in government agencies. Can then act as interlocutors between science & policy communities.

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Panel V: Continued – with Discussion

- Proliferation of donor-mediated publications is a new outlet for young science journalists, but perhaps they lack critical reporting.
- We have a super-abundance of knowledge. Need coalition of journalists to filter and scientists to provide/vet credibility.
- Scientists need training to avoid assumptions and jargon in their writing.
- Also need to learn to develop concise reports, short videos (not 60 mins).
- Countries with science media centres have much improved science-public communication; media workshops on complex/contentious issues.
- “Curse of knowledge”: It is difficult for someone with deep understanding of an issue to understand the reasoning of someone with less knowledge. Aim visually!
- Public consultation (especially on contentious issues) can effectively feed back into policy process.

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Panel V: Discussion - continued

- Academies: reach out beyond national borders and bridge political divides.
- Important (for public) to add a local flavour to breaking news stories.
- Hardly any use of social media to use evidence to debunk conspiracy theories.
- Need to get input of what the politicians want from us and how they want it.

Final thoughts

- Audience wants short, clear messages.
- Role for academies in debunking myths, e.g. on GMOs.
- Engage with groups (that may not be following scientific advice) in a meaningful fashion about their values.
- Get serious about Twitter. It has extraordinary reach in world of policymaking and journalism. **Follow #IAPartnership**
- Challenge to academies to think about how to measure impact of stories

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Cross-cutting themes

- Avoid the hubris of thinking science has all the answers. Be an honest broker. Build trust.
- When providing science advice, avoid requesting additional funds or advocating on policy-for-science issues.
- Engage women
- Include the social sciences
- Engage young scientists. Develop training and structures.
- How can we (academies) respond to requests for rapid responses for advice while maintaining rigour?
- How can we help ourselves and other scientists to understand society?
- **Communication, communication, communication!**