Science Policy & diplomacy: can we accelerate progress on the SDGs?

Sir Peter Gluckman ONZM FRS

Chair; International Network for Government Science Advice
Centre for Science for Policy, Diplomacy and Society
University of Auckland
August 2018 Pretoria
The road to 2030

» The changing scientific and technological environment
» What science and technology is needed for success?
» How Science, science-policy and science diplomacy can accelerate progress down the road.
civic life
(institutions of governance)

Social life
(institutions of society)

Individual life
(institutions of the self)

Gluckman and Allen 2018
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<table>
<thead>
<tr>
<th>Human development</th>
<th>From...</th>
<th>Towards...</th>
<th>Potential opportunities</th>
<th>Potential unintended consequences and inequities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early learning by experience and imitation from family and care givers aided by formal instruction; The importance of physical play to build social skills and non-cognitive functions</td>
<td>Increasing use of digital device-based learning in place of interpersonal learning. Less interactive and potentially less inter-human play Less ‘reality testing’ in defining exposures</td>
<td>Broader range of learning possibilities and skills development (e.g. allowing disadvantaged or isolated communities access to quality education) ...</td>
<td>Potential negative impact on acquisition of key skills; Exposure to hyper stylised experiences influencing interpersonal skills. Changes in attention time affecting learning; Change in risk taking behaviour, change in personality development (e.g. narcissism, conduct disorder), changed view of nurturing &amp; authority roles Greater likelihood of exhibiting lack of self-control under stress; Conduct disorder &amp; mental health concerns</td>
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• Privacy
• Autonomy
• Agency
• Social cohesion
• Relationship between citizen and state
• Institutions of the State
What is evidence?

- Politicians and policy makers have many sources of evidence
  - Tradition
  - Prior belief
  - Anecdote and observation
  - Science

- Scientific processes aim to obtain relatively objective understandings of the natural and built world. But important value judgments lie within science especially over what question and how to study it. But the most important in the context of policy is the sufficiency and quality of evidence.
The ‘post-trust’, ‘post-elite’ & ‘post-truth’ context

"relating to or donating circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief."

Jeremy Miner
A ‘crisis’ in science?

Reproducibility
Malfeseance
Incentives
Size of the endeavour
Intellectual silos
Coordinating science for the SDGs: whose job is it?
Mapping the road ahead…
The Global Research Alliance on Agricultural Greenhouse Gases brings countries together to find ways to grow more food without growing greenhouse gas emissions. It was launched in December 2009.

On this page you can find more information about the Alliance and why the Alliance is needed.

Read the brochure.

The Global Research Alliance on Agricultural Greenhouse Gases was launched in December 2009 and now has 49 member countries from all regions of the world. For more information on the membership, please see the Community pages.

The Alliance is focused on research, development and extension of technologies and practices that will help deliver ways to grow more food (and more climate-resilient food systems) without growing greenhouse gas emissions.
SDGs: Identified emerging technology

» Biotech
» Digital tech
» Nanotech
» Neuro tech
» Green tech
» ‘other’ (geo-eng, extraction),
Digitalisation

» Opportunities of AI and platform communication and transactions are obvious, but what of the threats?
  » Concepts of autonomy
  » Democracy
  » Personal, community and national identity
  » Transparency
  » Accountability
Life sciences

» GM, GE, Synthetic biology
» Responses to:
  » Biosecurity
  » Food security
  » Environmental management

…What are the trade-offs?
The understanding of risk

• Actuarial/probabilistic
• Perceptual
  • The role of cognitive biases
    • Availability
    • Representational
    • Confirmational
    • Anchoring
    • Asymmetry
  • Perception of gains and losses, benefits and burdens
• Reputational and political

• The misuse of the precautionary principle
There is a need to link science to the SDGs—through impact on policy

• Policies and institutional structures exist; can’t just map SDGs on top

• Reframe the SDGs in a holistic, manageable way

• Countries have the opportunity to work from manageable, but also to customize according to context and domestic priorities

• Link to bottom up policy pressures
Can interactions be a key driver in the implementation of the SDGs?

- Making the challenges of integration visible
- Some goals and targets have conflictual relationships; progress in one area may come at the expense of progress in others.
- Understanding potential synergies and trade-offs is critical for efficient and coherent implementation and monitoring
- Develop an holistic approach to drive system change
Promote Peaceful and Inclusive Societies for Sustainable Development. Provide access to Justice for All and build effective, accountable and inclusive institutions at all levels.
# Different roles in a science advisory ecosystem

<table>
<thead>
<tr>
<th>Role</th>
<th>Knowledge generators</th>
<th>Knowledge synthesizers</th>
<th>Knowledge brokers</th>
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</thead>
<tbody>
<tr>
<td>Individual academics</td>
<td>+++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Academic societies/professional bodies</td>
<td>+</td>
<td></td>
<td></td>
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<tr>
<td>Government employed practicing scientists</td>
<td>+++</td>
<td>+</td>
<td></td>
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<tr>
<td>Scientist within regulatory agency</td>
<td>++</td>
<td>++</td>
<td></td>
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<tr>
<td>Independent think tanks</td>
<td>++</td>
<td></td>
<td></td>
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<tr>
<td>What works units etc</td>
<td>+++</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>National academies</td>
<td>+++</td>
<td>+</td>
<td></td>
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<tr>
<td>Government advisory boards/science councils</td>
<td>++</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Science advisors to executive of government</td>
<td>+</td>
<td>+++</td>
<td></td>
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<tr>
<td>Science advice to legislators</td>
<td>+</td>
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Science Diplomacy: a broader and more utilitarian taxonomy

- Direct national interest
- Common interest
- Global interest

Science diplomacy for direct national interest

• **Voice/influence /soft power/reputation**
  - Bilateral relations
  - Projection
  - Development assistance

• **Security**
  - Crisis, emergencies, disasters
  - Technical aspects of treaties
  - Tension resolution
  - Threats (eg cyber)

• **Economic**
  - Trade
  - Standards and definitions

• **National need and capability**
  - Technical capabilities
  - Access to infrastructure
  - Access to knowhow, knowledge
  - Develop domestic STI
Science diplomacy for common interest

• Resource management
  • Trans-boundary/regional resource issues
  • Conservation/environmental management
  • Biosecurity
• Shared agencies
• Shared technical services and infrastructure (eg, Pacific Commission, EFSA)
• Crisis and disaster management crossing boundaries (eg Iceland ash cloud)
Science diplomacy for global interest

• Common and global challenges
  • Climate change
  • SDGs
• Ungoverned spaces
  • Space
  • Oceans
  • Antarctic
  • Internet
• Addressing new technologies that may avoid jurisdictional control or require collective approaches
  • Geoengineering
  • Release of synthetic bacteria and advanced life science technologies.
  • Digital technologies:
Integration of the science-policy interface

- Multilateral policy agenda setting is isolated from the reality of domestic policy processes
- There is a domestic disconnect that slows vertical integration of understanding between global and local policy processes
- Need for better connection between science communities and foreign policy community within countries
> Over 2800 members from over 80 countries and growing
> Regional chapters
> Science diplomacy division
> Knowledge centre
> Forum for sharing, coordinating, networking
> Capacity building activities
> Open access learning resources
> Hosts FMSTAN

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