

# The multiple dimensions & challenges of the science-policy interface

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**INTERNATIONAL  
COUNCIL  
FOR SCIENCE**



International Network  
for Government  
Science Advice

# International Network for Government Science Advice

- Operates under the aegis of ICSU, as the legal entity
- A memorandum of understanding with UNESCO signed yesterday
- Concerned with all dimensions and levels of science advice
- Roles
  - Forum networking
  - Promote research and resources
  - Capacity building workshops
  - Thematic workshops
  - Principles of science advice (ICSU, UNESCO, WSF 2017)
- Membership is open to academics, practitioners and policy makers

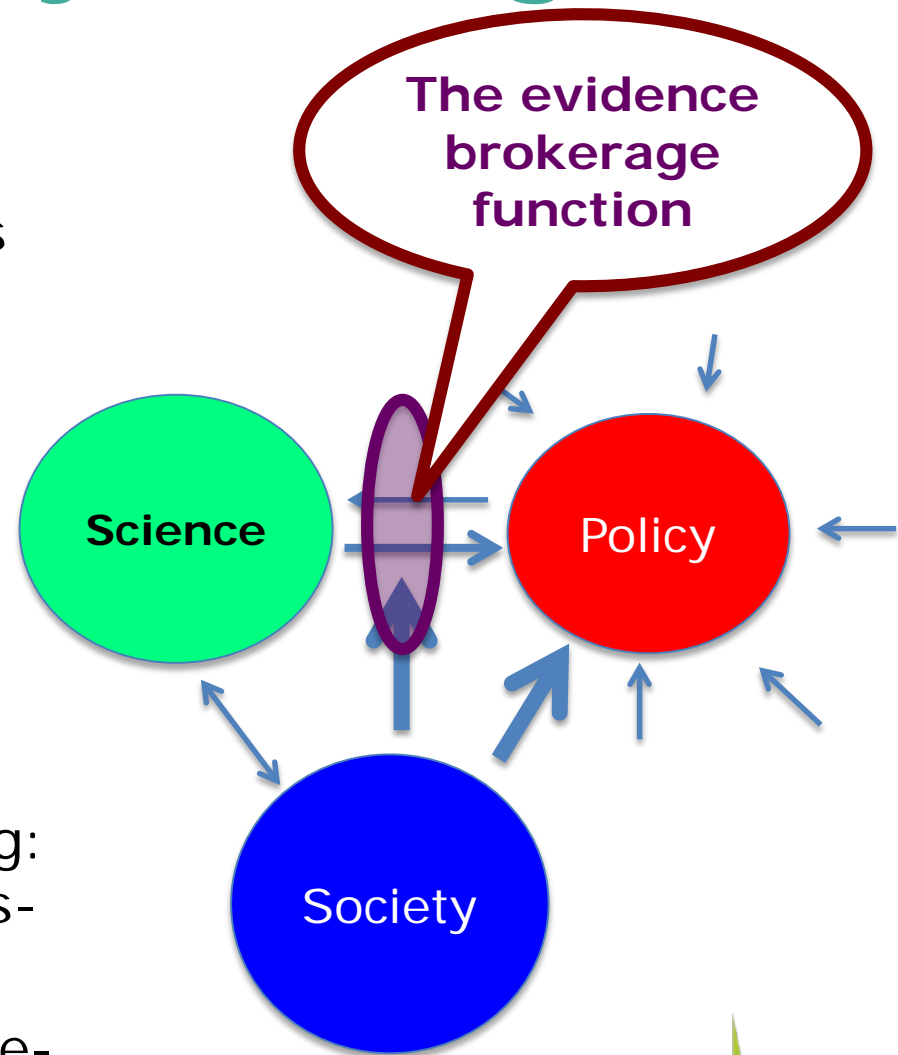


[www.ingsa.org](http://www.ingsa.org)



# Science & Policy Making

- Science and policy making are largely distinct cultures
- The nature of the interaction is influenced by context, culture and history and by the relationship between science and society
- There is increasing recognition of the need for 'evidence brokerage' at this interface
- The nature of these boundary entities is variable and evolving: there will not be a one-size-fits-all model
- The effectiveness of the science-policy nexus is interdependent with societal interactions



# The evolving science-policy nexus

- The nature of science is changing
- The relationship between science and society is changing
- The nature of policy making is evolving
- The relationship between society and the policy process and policy 'elite' is changing
- Evidence informed policy making sits at the nexus of science, policy and society
- There is a need to consider how these interactions can be made more effective and inclusive
- Evidence brokerage is evolving into a distinct set of skills



# Science in the 21<sup>st</sup> Century

- Increasingly science is embedded within societies rather than standing apart from them
- It is seen as a tool of national and international development and is placed in a more utilitarian framing by Governments
- The need for science in the policy process at both national and international levels is increasingly understood
- The explosion of knowledge and the pace of innovation is both an opportunity and a challenge for societies and governments
- The issues of social license for science and technology are growing
- And the nature of science itself has changed and continues to change



# Changing nature of science

- ✦ From linear to non-linear
- ✦ Accepting complexity
- ✦ From reductionist to systems based
- ✦ From presumed certainty to probabilistic
- ✦ From *normal* to *post-normal*...
  - The science is complex
  - Facts uncertain
  - There is much which is unknown
  - Stakes are high
  - Decision making is urgent
  - There is a high societal values component and these values are in dispute



# Post-normal science

- Much science applied or needed in the policy space is inevitably 'post-normal'
- These characteristics, and the frequent failure of the science community to recognize them, can make publics, policy makers and politicians skeptical about the role and utility of science.
- Science advisory and evidence brokerage systems must be cognizant of these characteristics to be effective
- This has important implications for inclusive considerations of knowledge generation and inputs into the nexus



# The role of values in considering the science - policy nexus

## Integral to the scientific process

- Critical thinking
- Skepticism
- Choice of question
- Research ethics
- Integrity of the processes
- Avoid bias in collection and analysis of data
- Acknowledging the limits of data and the inferential gap
- Judging the sufficiency and standards of evidence

## Integral to individuals (incl scientists) & society

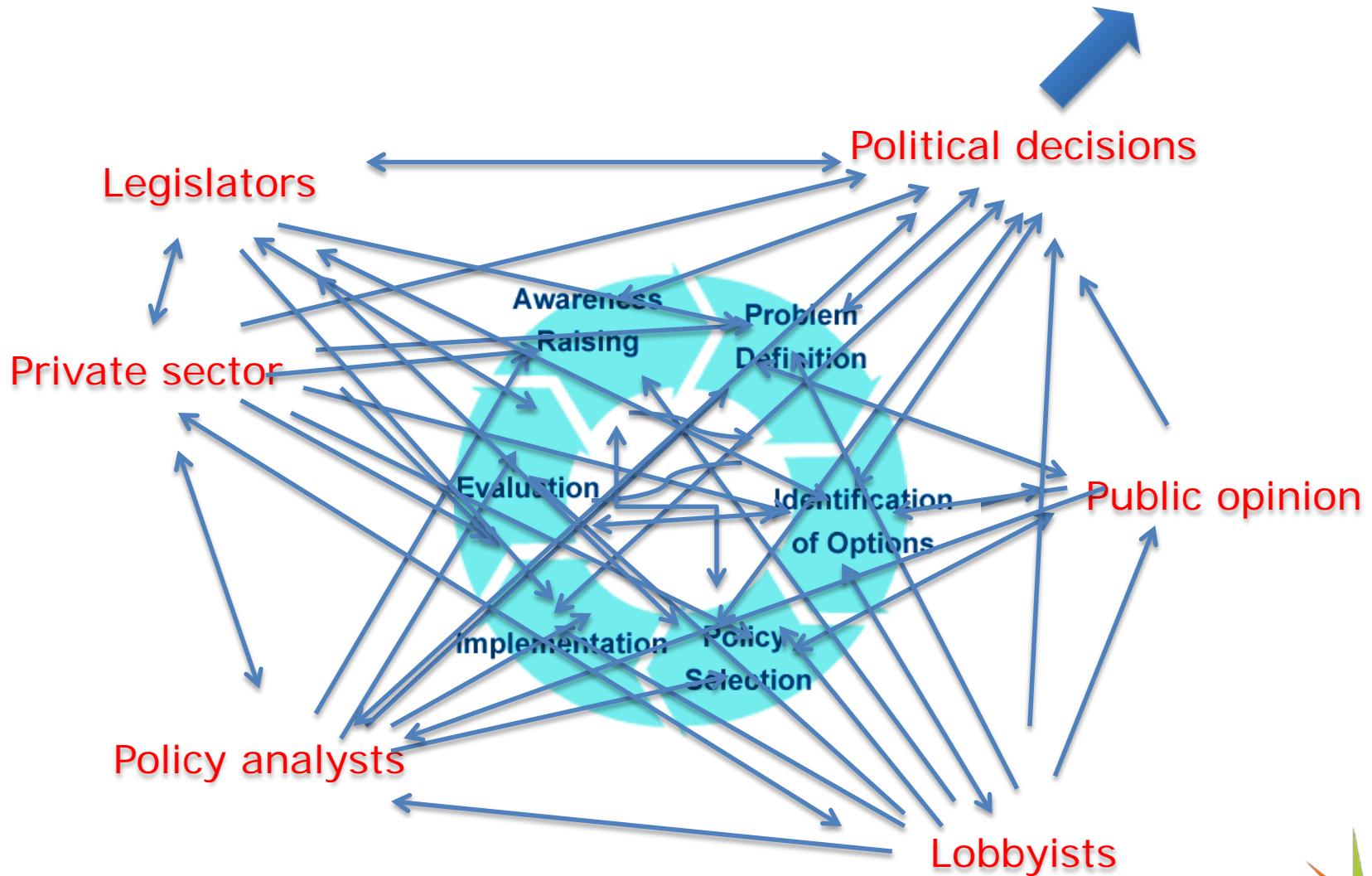
- Cultural, political and religious
- Egoistic, social-altruistic or biospheric
- Hierarchical vs individualistic
- Past experience
- Indigenous and local knowledge
- Cognitive biases





# Policy making is messy

**POLICY**



# The realities of the interface

- Policy making is rarely determined by the evidence alone but well brokered evidence can and should enhance the policy process
- Interpreting the place and meaning of different forms of evidence is a key part of brokerage
- But policy makers often lurch to problems
- Policy makers generally see the science community as being good at problem definition but not great at finding real-world and policy-acceptable solutions
- Evidence brokerage has to be cognisant of these realities



# Overlapping dimensions of science advice

- From technical to regulatory to policy advice
- Time scales from immediate (crisis) to deliberative to foresighting
- Informal/formal
- Internal to the policy system (e.g. science advisors) to external to the policy system (most academies)
- From local to national to international



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- Few systems consider all these dimensions



# From national to international

- Achieving the SDGs will require a more evidence informed approach to policy making
- Because much international decision making is effectively made by member states (in the UN system) or is filtered by the recipient county, in general effective international science advice cannot operate optimally without well developed domestic science advisory systems that...
  - can argue for the enlightened self interest of nation states;
  - are well connected to diplomatic and related systems.
  - These can be supported by transnational mechanisms
    - International agency advisory boards
    - Better *a priori* liaison between national advisory systems
    - Scientific input into regional mechanisms eg APEC
    - The role of an internationally linked national science advisory network - INGSA





# Further challenges for national advisory mechanisms are created by...

- ✦ The varying states of national development
  - Governance
  - National institutions
  - National science capacities
- ✦ Context, culture, constitution of a country
- ✦ Nature of public engagement and policy discourse within a country
- ✦ Attitude to experts and 'elites' within society



# Some principles & guidelines for science advising

- Distinguish *science for policy* from *policy for science*
- Understand science informs and does not make policy
- Recognize the limits of science
- Brokerage not advocacy
  
- INGSA is developing a set of principles and guidelines for reporting to the World Science Forum 2017
  - Building off previous work
  - Working party will report on draft development tomorrow
  - Regional consultations
  - Electronic consultation with INGSA membership
  - ICSU and UNESCO consultation
  
- Be cognisant of the different roles, levels and structures of evidence brokerage



# The role of INGSA

- Promoting an understanding of the needs, skills and principles related to evidence brokerage
- Promoting research related to evidence brokerage
- Promoting capacity building for evidence brokerage on the supply and demand sides and both at individual and institutional levels
- To be a resource that can partner with other parts of the science and policy ecosystems



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