

A Bridge over Troubled Water – facilitating science into policy

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We live in a world in which issues such as climate change, disease and poverty require urgent measures that provide a sustainable impact. Policies and strategies to address these issues – whether formulated and implemented by Government, charities or industry – must be based upon evidence and credible modelling. Key to these is a thriving science, engineering and technology (SET) research base, in both academia and industry, which can effectively inform the policy processes.

The difficulties of transferring scientific evidence into policies and strategies have been known for a long time and the process is unlikely ever to be easy. For example, a central and enduring problem is that the scientific method does not give immediate certainty, which often is what policymakers are seeking. Scientific advance seldom comes in tidy black and white blocks. At the cutting edges of SET, initial uncertainty regarding what new research shows, and what it means in the bigger picture, is almost inevitable. New results in one study must be independently verified through repetition by another research group, as well as peer review. Different interpretations of the same results may well be put forward. New hypotheses will be generated and early results will be built upon as new questions are asked, their answers sought and, hopefully, found. Ultimately a consensus may be built up by most experts in the field, although there are often a few who will disagree. To add to this complexity, scientific or technical data, particularly that relating to issues such as risk, hazard or impacts, can be used by different groups to support one position or another. For policy makers this can be confusing – what is fact and what is opinion or even dogma? The long timescales required to reach a consensus in science also often pose a problem as policymakers tend to work in shorter cycles.

Within the policy process a major limitation is the lack of tools to interpret science and its methodology and thus the ability to design effective gateways to feed science into policy. Policymakers come and go, but the processes and the mentality within policy generating bodies, be they Government, Parliament, charities or others, tend to stick. Another serious problem is that many within the scientific community do not realise that their own work and research could have an impact on the development of policy and that they therefore could have an additional role to play in society.

These are not novel problems, but a novel approach is now needed to ensure that the gateways through which policymakers interpret and capture scientific evidence are radically improved. Any attempt to do this must bring together those who produce scientific evidence, with those who are engaged in the policy process. This is **not** about **lobbying**, but about **informing**. Effective and neutral facilitation of understanding is needed so that the crucial evidence base can be used to produce policies on issues which will have a fundamental impact on the wellbeing of society – for example in the areas of environment and health. Not only do we need to bring this realisation to the best of the UK scientists of today, but also to those younger scientists who will form the science base of tomorrow. Practical, easily implemented communication and analytical tools and evaluation frameworks must be developed within policy generating bodies in order to strengthen their ability to consider scientific evidence, or the lack thereof, when developing long-term policies. The gateways through which policy invites science to engage and to share expertise, where policy interprets science, and where the two cultures meet, must be adapted to the constraints and abilities



of both the science and the policy arenas. In order to close the gap, novel practical solutions must be developed – and most vitally – implemented and evaluated.

Newton's Apple was established to do just this: to act as a bridge between the science and policy communities and to foster an increase in the use, and effectiveness, of the science-into-policy gateways. Things won't change overnight, but the projects Newton's Apple has carried out thus far have already shown promise. Practical methods, training and applications have to be developed jointly with, and spread within, the two communities. Currently two programmes are under development in these areas. The first aims to develop science policy training for early career scientists enabling them to understand the impact that their research could have on policy as well as how they could access the science-into-policy gateways. The second will provide guides to create useful and practical frameworks and tools in which scientific evidence can be identified, evaluated and used in policy-making. The prime objective of both programmes is to facilitate a smoother flow of outputs from the UK science, engineering and technology base into the policy process. Ultimately this will bring great benefit to all of us in society.