The missing link of science in policy – 1M scientists and 100M hours could be part of the answer

For science to be part of policy making, we need a culture of engagement and scientists need to be recognised and rewarded for developing and deploying those skills

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Listen to the podcast where Professor Morgan talks about her initiative

Summary

We can only tackle 21st century challenges if more scientists reach out to the policy community with relevant science, articulated in ways that engage policy makers. Valuing and rewarding scientists who devote time to gaining and deploying these skills could create momentum that will not only transform policies formulated now, but will ensure the next generation of scientists have a voice in ensuring that excellent science is in the hands of those serving society. We are at a crossroads. As World Economic Forum Young Scientists (past and present), we raise this issue and call for change at the global level so that, in the future, science is more effectively and sustainably infused into policies that enable solutions to global challenges. The ways we assess and evaluate research and scientific excellence are currently being discussed across the world, with initiatives such as the Declaration of Research Assessment (DORA) raising critical questions. We need to build a commitment to science policy engagement into our assessments of research excellence.

Overview

Communication is the precursor to active and dynamic conversation. Conversation creates networks and connections and ultimately community and culture. If we are to achieve a culture in which science is an integrated part of policy making, we need scientists who are not only excellent in undertaking and delivering robust science; we need scientists who are also effective communicators of their science beyond their primary discipline. This requires communication that has traction and contributes to solving problems, and communicators who are aware of the economic, political, and cultural context in which the science is situated. Therefore, as a key means of ensuring science-informed policy, broad and diverse science communication skills must be nurtured, valued, and encouraged, to ensure [ongoing dialogue between scientists and global leaders, policy makers and those entrusted with governing national and international agendas.](#)

However, developing skills in communication, network building, and engaging in dialogue cannot be the whole answer if we are seeking a culture that will deliver the necessary impact. Scientists operate within organisational infrastructures with multiple layers, from the research group to the institution and beyond, to the national and international academy. These organisational infrastructures assign value to and reward pre-defined measures of success throughout a scientist's career. Therefore, to achieve the level of engagement with policy that we need, and the impact of science that is possible, scientists at all stages of their careers need to be recognised and rewarded for developing and excelling at communication and engagement.

The problem

The assessment of scientific performance is currently generating discussion globally.

For example, [Project TARA](#) has been designed to help [DORA](#) identify, understand, and make visible the criteria and standards universities use to make hiring, promotion, and tenure decisions, with a goal of creating resources and practical guidance for research-assessment reforms for academic and scholarly institutions.

DORA was articulated out of a recognition that current metrics are often rigid and incentivise a deep but narrow skill set. Metrics are predominantly focussed on research that produces publications in top journals and achieves high citation indices, alongside the amount of competitive research funding won. In some fields, the level of industry engagement—evidenced by metrics such as the number of patents and spinout companies—is also considered. These metrics can offer insight into the quality of research by considering its outputs, which can be diverse (including not only published articles but data, software, intellectual property, and trained graduates). However, these metrics *cannot* capture the traction the science has in the ongoing dialogue with policy.

Policy is produced at the nexus of many stakeholders and disciplines, and it is strongly rooted in the ongoing dynamic exchanges between those people who are 'at the table'. Policy outcomes are often clearly articulated, but the formation of those policies can be difficult to trace to specific pieces of research—policy outcomes are synthesised and are greater than the sum of their parts.

The current metrics used to evaluate scientists cannot address the traction of their science in ongoing policy conversations. Therefore, scientists are not generally recognised or rewarded for developing skills and excellence in science policy engagement, or for devoting time to these activities. Yet, without science at the table of policy, working with and for society, we face a future in which excellent science will not always be in the hands of those who can deploy it for the good of society.

The solution?

If one million scientists (approximately 10% of the world's active science population in public service) committed two hours per week to science engagement with and for society (about 5% of their working time), this would create approximately 100 million hours/year dedicated to achieving science that engages meaningfully with policy and global decision makers. Those hours could catalyse a global butterfly effect that could carry into the future.

If we are seeking to ensure that science impacts society, we need to incorporate excellence assessments that value and reward science engagement in policy. Conversation, communication, and engagement skills are broad and diverse, and there is clearly no 'one-size-fits-all' metric. However, it is highly important to generate a dashboard for assessing excellence, which recognises skills in synthesising key, policy-relevant science findings and insights into a dynamic conversation, whether in written, oral, or visual format. These storytelling skills are skills that develop over time and are highly dependent on both the individual scientist and the topic at hand. Some scientists with the right opportunities become experts in the creation of the one-page briefing, others in the three-minute oral presentation or pitch, some in the creation of the issue-encapsulating figure, others in the creation and publishing of the so-called 'pop-sci' book, and still others as conversation architects.

It is important to keep a systemic view. All these skills are situated in the network the scientist and/or the scientist's institution has developed, and that network is the route for getting the science to where it is needed. We need skills *and* networks, and they must both be recognised, valued, and rewarded for their short- and long-term outcomes.

We must also recognise that we do not need a universal metric that is rigidly applied to every scientist. The value of diversity in science and the scientific community is as important as in all other spheres. However, we do need to encourage and enable scientists at every stage of their careers to explore and develop skills for communicating and engaging those in policy. The academy will be richer, more current, and more embedded in policy if it has members who are skilled communicators and engagers, alongside other members with skills

in entrepreneurship, winning research funding, engaging teaching, and management leadership.

Conclusion

To tackle the challenges of the 21st Century and the 4th Industrial Revolution, we need more scientists who can reach out to policy with relevant science. Science will be relevant when it is articulated in ways that engage policy makers in ongoing, dynamic dialogue that infuses science into the culture of policymaking. If we persist with rigid and narrow metrics for assessing scientific excellence, we risk disincentivising scientists from spending time developing these kinds of synthesis and communication skills and, critically, from devoting the time in conversation 'at the table of policy' that is necessary to embed science into policy making.

We are calling for global institutions and leaders to consider the potential of 1M scientists and 100M hours, to support this initiative and to be part of the change that is needed. The power of recognizing and rewarding just 10% of the worlds' scientists currently in public service for spending the equivalent of 2 hours per week on policy engagement could create a ripple effect and assure that science is in the hands of those tasked with making the world a more sustainable and equitable place.

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