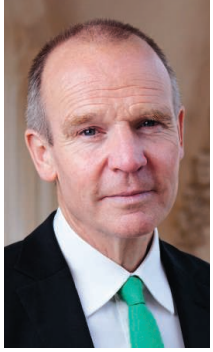

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The Science of Sustainability

THE QUESTION OF WHAT CAN BE ACHIEVED IN 1000 DAYS HAS PREOCCUPIED KINGS, QUEENS, presidents, and, very recently, the Secretary-General of the United Nations (UN). Ban Ki-moon has not only appealed for a last big push to reach as many as possible of the UN's Millennium Development Goals (MDGs) by the deadline of 31 December 2015, he is advocating the establishment of objectives that should succeed the MDGs as well. Strong clues about the shape of the post-2015 agenda can be found in two recent reports, one published last month by a High-Level Panel* convened by Ban Ki-moon and chaired by the presidents of Indonesia and Liberia and the prime minister of the United Kingdom, and the other released this month by the Sustainable Development Solutions Network.† Both reports list the eradication of poverty as the number-one priority and set out complementary goals concerned with gender equality, education, health, food, water and sanitation, climate change, energy, employment, natural resources, governance, peace, and finance. These reports are unlikely to be the last contributions to the debate, but the proposed goals represent a call to action for the science community.

The plain truth is that it is not clear how these goals will be met, but it is evident that to fill the development gap, we must fill the knowledge gap from many different sources. More than ever, multidisciplinary research must be treated not as a formulaic insert on grant applications but as an immediate development necessity. Healthy lives do depend on food security. Poverty reduction does depend on jobs and equitable growth. Good governance is critical everywhere.

Two cross-disciplinary experiences amplify the point. Building resilience to natural hazards, such as hurricanes and earthquakes, and reducing deaths from them are subcomponents of eradicating poverty, because the poor suffer disproportionately from such events. Much progress has been made in building resiliency through collaborations between geoscientists, engineers, and architects; there are now early warning mechanisms, reinforced shelters, and improved modeling of complex events to target populations at risk. But the effectiveness of these remedies also depends on how vulnerable people weigh the risks to life and limb against the cost of abandoning property. So the best plans for risk mitigation should be informed by social sciences as well. Protecting people against risk is also central to achieving universal health coverage, a unifying goal in global health today. The twin questions of who is most at risk of impoverishment due to illness and what are the best ways to provide them with financial protection, call for a blend of epidemiology and welfare economics, set against the backdrop of societal preference. Universal health coverage requires services, not only for the treatment of illness but also for prevention, which may need a combination of educational, environmental, public health, and policy measures.

The two reports present a vast landscape of research possibilities. Research priorities must emerge from a global debate involving scientists, private investors, public funding agencies, and policy-makers, without forgetting the people who might benefit from the research. A guiding research agenda could stimulate fresh ideas and perhaps give renewed impetus to old ones. It would help strengthen research capacity around the world, fostering new institutions and networks, training high-caliber researchers, and generating data, ideally as an open and shared resource. It would also bring a responsibility, or at least an opportunity, to translate research results into action.

Although the post-2015 development agenda is still a draft, it is shaping up to be a huge and exciting challenge for science. For those ready to take it on, there is no need to wait until January 2016.

— Christopher Dye and Marcia McNutt

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*www.post2015hlp.org/wp-content/uploads/2013/05/UN-Report.pdf. †unsdsn.org/files/2013/06/130613-SDSN-An-Action-Agenda-for-Sustainable-Development-FINAL.pdf.

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