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Geology for Global Development: An International Initiative to Strengthen the (Earth) Science-Policy Interface and Help Catalyze SDG Implementation

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The SDGs are 'science intensive', with implementation of their targets requiring contributions by scientists focused on understanding, monitoring, protecting, managing, and restoring the natural environment. This includes Earth (or geo-)scientists. Their understanding of the Earth's structure, processes, and resources, and how life of all kinds interacts with Earth systems can help (in partnership with others) to provide essential services, the growth of green and diverse economies, the development of sustainable and resilient cities and infrastructure, and effective protection of environmental systems. To ensure the relevance of their work to policy priorities and the unimpeded flow of knowledge between Earth scientists and decision makers, actions are needed to strengthen the (Earth) science-policy interface. Here we set out three examples:

(1) Improve coherence between development, science, and higher education strategies. Delivering the ambitions of the SDGs in any national context will require Earth scientists with specialised training in (for example) groundwater management, natural hazard analysis, and mining geology. After evaluating what Earth science contributions are required to deliver their SDG implementation strategies, national governments should take appropriate steps to ensure the need for this capacity is reflected in science and higher education strategies.

(2) Increase participation of Earth scientists in national and international policy mechanisms. Thousands of Earth scientists gather each year at major Earth science conventions (i.e., traditional scientific meetings) but are typically underrepresented at key sustainability meetings, resulting in missed opportunities to inform implementation strategies. Awareness raising to increase both physical attendance and active participation at such meetings and contributions to interdisciplinary reports (e.g., the Global Sustainable Development Report) is required.

(3) Support Earth scientists to actively reflect on, and embed into their work, key aspects of social and political context. Enhanced socio-political understanding (e.g., how government works), recognition of the complexity of policymaking, and an introduction to the practical skills required to contribute to 'science diplomacy' can help Earth scientists to understand the information requirements of decision-makers and how to nurture relationships with these

communities.

Geology for Global Development, a UK based charitable organisation in special consultative status with UN-ECOSOC since 2022, are contributing to each of (1)–(3) through three interrelated work programmes. They have established a **research programme** with one focus being 'education for sustainable development' (e.g., an analysis of current Earth science education courses in Kenya, contrasting with Kenya's renewable energy ambitions). They are facilitating the Earth science community, particularly early-career researchers, to be **active in national and international policy mechanisms** (e.g., convening a side event on Earth science education at the UN STI Forum), and are publishing **open-access learning resources** for use in higher education settings (e.g., a module on 'geoscience and sustainable development').

Collectively these actions (and the practical examples from the work of *Geology for Global Development*) help to enhance Earth science education, strengthen the science-policy interface, and increase the relevance and impact of Earth scientists' contributions to the implementation of the SDGs.