Need for Promoting Science Diplomacy in African Union Member States

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Introduction

Science diplomacy is the use of scientific collaborations among nations to address common problems facing 21st century humanity and in building constructive international partnership. Yet the current reality is that many African countries are not utilizing science diplomacy in order to address many challenges prevailing in these countries.

The continental fragmentation and small domestic markets translate into a lack of economic scale in the production and distribution of goods and services endangering millions Africans. With a few notable exceptions, African states have not yet developed the robust, efficient, and lasting scientific and technological capability and culture required for economic and social progress.

As a result, only 2.3 per cent of the world research community comes from Africa, and the continent contributes only up to 2 per cent of the global scientific publications. This situation is unlikely to improve unless the uneven support to science and technology is comprehensively and systematically addressed. Transnational cooperation constitutes the most rational way to develop adequate solutions to the increasingly acute and complex challenges facing the continent.

The interface between science and diplomacy, which goes well beyond the building of bilateral or multilateral scientific relationships, and speaks to broader foreign policy objectives, has not yet been fully explored in Africa.

The continent needs effective application of science *in* and science *for* diplomacy because of its political and economic fragmentation, its conflict-prone status, and its vulnerability to negative geopolitical trends.

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Additionally, the African continent *needs to develop endogenous science-led diplomacy, supported by sound and fair international cooperation, which not only will* help African countries build their STI capacity through stronger regional partnerships, but also can be used to identify, address, defuse, and ultimately solve cross-border or trans-boundary problems facing the continent.

Practices of Science diplomacy among the African Union Member States

Africa's patchwork of nation-states is uniquely positioned to take advantage of the world's abundant scientific and engineering expertise in order to address its myriad economic, environmental, and social challenges. A recent World Bank report illustrated the opportunities ahead: "Vertiginous changes brought about by the digital revolution in the past 20 years make leapfrogging (skipping steps, charting new paths) in Africa not only a possibility but a necessity.

African political leaders have recognized, albeit only recently, that *science and technology should be* a top development priority and have endorsed a funding target of 1 per cent of each country's GDP on research and development. Today, almost every national, regional, and continental policy document and strategic development plan has science, technology, and innovation (STI) as a high priority. The most emblematic of these include:

- "Science, Technology and Innovation Strategy for Africa 2024" (AU, 2014))
- "Support to Higher Education, Science and Technology" (AfDB, 2009)

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Even as few successes in science diplomacy have been recorded, and the documented successes are mostly in the health sector—namely, control of infectious diseases such as river blindness and leprosy, and vaccine-preventable diseases such as polio—a host of obstacles stands in the way of broader applications of the field. Various deficits associated with fluid and conflicting political and economic agendas, cultural sensitivities, and endemic mistrust often hamper science diplomacy processes. The situation is exacerbated by a lack of qualified practitioners, weak research-to-policy interfaces, and the marginal role played by research institutions, universities, and civil society.

Despite the absence of a well-defined Africa-wide science diplomacy approach and strategy, the core principles of science diplomacy (attraction, cooperation, and influence) have already been folded into the African Union's Agenda 2063 strategic framework for the socioeconomic transformation of the continent.

The most promising issues to consider for applying science diplomacy in Africa include: **management of trans-boundary water resources,** including to enhance international water laws and regional cooperation. Africa has approximately one-third of the world's major international water basins, with about eighty International River and lake basins and fifty trans-boundary aquifers. Virtually all countries share at least one international water basin, and certain countries serve as the cradles of several international rivers (e.g., Guinea, an extreme case, has twelve such rivers).

The continent likewise has huge potential for energy production through hydropower, for food production, and for environmental rehabilitation, with the link between water and energy increasingly important to recognize.

Despite this relative abundance, water scarcity is a rising concern in many parts of the continent and the cause of political tensions that can sometimes escalate toward war. Water-related conflicts have occurred throughout the continent, from its dry to its fertile regions.

These have revolved mainly around equitable access, benefits sharing, and governance issues. The recurrent heated tensions between Nile River

riparian countries drawing from Lake Edward (Uganda, Democratic Republic of the Congo) and Lake Victoria (Kenya, Uganda) best exemplify the acuteness of the problem. In such cases, science diplomacy can help in:

- Developing a mutually agreed understanding of the spatial and temporal scales of the conflicts
- Crafting integrated and inclusive management plans for sustainable and equitable use of water resources on national, regional, or continental scales
- Drawing up a wide array of coping strategies and tools (including effective communication mechanisms and efficient institutional and legislative frameworks); and
- Deriving workable protocols for mitigating and preventing water-based conflicts.

Two related areas that call for judicious science diplomacy–led collaboration are:

Cross-boundary water-transfer projects, from abundant reservoirs to those in less-endowed regions, that distribute water more efficiently and cost-effectively (Congo basin–Lake Chad water transfer project; Lesotho Highlands water-transfer project).Science can and should play a critical role in providing informed decision making and options that ensure the associated diplomatic process is objective and inclusive.

Challenges of Ineffective Practice of Science Diplomacy in the African Union Member States

Due to the ineffective practices of Science diplomacy, the member state countries are not benefiting from their natural resources. For this and other reasons the member state countries are facing the following challenges:

- Managing shared natural resources, protecting the environment, and addressing climate change;
- Coping with adverse impacts of climate change while promoting climate-compatible development and achieving the UN Sustainable Development Goals, known as Agenda 2030;
- Resisting and repelling international terrorism and addressing its cohort of humanitarian issues;
- Preventing, controlling, and eradicating human and animal pandemics;
- Promoting democratic principles and institutions, popular participation, and good governance;
- Establishing and fostering sound academic and scientific foundations;
- Achieving economic, trade, social, and political collaboration, coordination, and convergence.

Conclusion

Science diplomacy in Africa is in its infancy and has a long way to go. Even though the continent has made significant progress toward meeting some of its ambitious objectives for development and political integration, the need remains for further progress achievable through a smart, systematic application of science interacting with diplomacy. Science diplomacy should, therefore, be recognized as a priority in shaping continental as well as national policy and development agendas. Many challenges, of course, wait. The primary one is how to build up the needed science diplomacy capabilities through educational curricula, training, and experiences that reflect norms and values directly relevant to Africa's development aspirations. The second challenge is how Africa can devise a "code of conduct" for science diplomacy that takes into account its legal, cultural, and political specificities as well as the ambiguities, tradeoffs, and competing interests at play in conflicts. The third main challenge is how to facilitate cooperation and trust among scientists and diplomats, supported by the communication and empathy essential to conducting broad negotiations.

To harvest the many potential benefits that science diplomacy could produce, African governments must collaborate with credible international partners to strengthen local research capacity, establish an appropriate regulatory environment and policies, and support the current drive toward regional integration. Cross-border cooperation can then favor the advent of an integrated African scientific community. The recent successes in cross-border initiatives in pandemic control, peacekeeping, and information and communication technology have created rich soil in which science diplomacy can take firm root and grow.

References

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