

Science, Technology, Innovation and Kenya's Diplomacy: "The Nexus"

Dr. Christopher Chumba¹, Dr. Gladys Chepkirui Rotich²

¹MA (National Security and Strategy) of the National Defence University-Kenya

²Jomo Kenyatta University of Science & Technology (JKUAT)

***Corresponding Author:** Dr. Christopher Chumba, Master of Arts in National Security Strategy of the National Defence University-Kenya

Abstract: Globally, the interaction between Science, Technology and Innovations is becoming more and more necessary for governments to tackle global challenges. Indeed, recent evidence from scholars point out the growing role of STI disciplines in promoting diplomacy. At the global level, countries such as USA and China have been on the forefront in utilizing STI. However, while progress for STI globally is taking shape, emerging challenges underscore the need to explore in detail the potential of STI in promoting diplomacy. Kenya has been establishing Science and Technology (S&T) institutions in the effort to develop and apply science and technology towards addressing the country's development priorities. Yet, STI Diplomacy is a nascent issue in Kenya. The aim of this study was to investigate the nexus between STI and diplomacy in Kenya, exploring key thematic areas including bilateral scientific cooperation, Research and Development initiatives and collaborations in green energy technology. The paper demonstrates that the nexus between STI and diplomacy can be advanced bilateral scientific cooperation, research and development, FDI, technological transfer and strategic partnerships, particularly in the health sector towards recent COVID-19 pandemic, HIV-AIDS support and climate-agriculture. While these initiatives are key, there is still need for Kenya to provide a platform strategy to harness its own advancements in R&D, technology and innovations. The paper reflects on the need of an STI policy review, which has challenged the crucial role of STI and the opportunities for bilateral cooperation, attracting FDI and promote technology transfer. Conclusions are set, pointing out the importance of new models of STI. It recommends concrete STI policies that promote national interests, targeted funding and institutional support as well as new models of STI, including public-private partnerships and tapping diasporic communities as key actors that can advance the benefits of STI diplomacy.

Keywords: Diplomacy, Bilateral/multilateral cooperation, Science, Technology and Innovations

1. INTRODUCTION

Globally, the critical role Science, Technology and Innovations (STI) has become a key pillar defining how governments respond to global issues. Within the STI framework, its growing role has now been adopted as a tool defining not only diplomacy but foreign policy choices among states. This has commonly now been referred to as STI diplomacy, which is shaping key practices on how nations interact, both nationally and internationally. A number of developmental initiatives are now being undertaken under the STI, beyond the governments, where MNCs and private entities are also harnessing the STI benefits in research centers that are influencing bilateral and multilateral cooperation within the diplomatic chain.

Arguably, recent evidence from scholars¹ point out the growing role of STI disciplines in advancing socio-economic, political and environmental benefits. In what is now commonly referred to as 'knowledge economy', STI is a tool that states are utilizing to gain competitive edge, while strengthening their global diplomacy influence. In this context, there is a shift from the traditional diplomacy discourse where negotiations were held in a secretive nature by a small group of diplomats, to a new form of diplomacy that is driven by globalization. In this new era, a multifaceted approach has seen various actors and tools being utilized through STI. For example, advances in scientific

¹Bandopadhyay, Amitava. STI Diplomacy and Developing Countries: Current Issues and Challenges. *Research for Development*. 2023.

practice in climate change, health and technologies being applied in trade, military operations and innovations in financial sector represent ways in which STI is a critical instrument in promoting diplomacy gains. While the developed economies are on the fore-front in STI diplomacy, this increasing commitment has not yet been fully achieved for the developing countries, particularly in Sub-Saharan Africa. Thus, it can be argued that the uptake of STI is increasing, but its strong interface with diplomacy has not received adequate scholarly attention at the local level.

The linkage between STI and diplomacy can be addressed in various forms. First, STI has necessitated the involvement of a wide array of actors from government, research institutions, international organizations and private sector groups, universities that are that enhance Track II diplomacy.² Secondly, strategic alliances in bilateral scientific cooperation are at the centre stage in promoting international agreements through diplomacy, where states are making advances in scientific research in vaccines and GMO projects. The progress in scientific fields is also opening up knowledge exchange platforms by diplomats. Third, STI has opened up the research and development initiatives, through multilateral cooperation in green energy technologies. The global attention being paid to renewable energy sources is now a foreign policy tool through which diplomats are now placing technologies innovations at the negotiation table.

At the global level, developed nations including USA, China, UK, Canada, Russia, France among others have been championing STI Diplomacy. These nations have made ambitious plans in their pursuit of STI programs, R&D, technological prowess as part of their diplomacy influence. For example, Japan promotes "science and technology diplomacy in various forms. For Africa, the positioning for STI as a diplomatic tool has also been on the top agenda for realizing its developmental targets, within the 2063 Africa goal. However, while progress for STI globally is taking shape, emerging challenges underscore the need to explore in detail the potential of STI in promoting diplomacy. Consequently, the global challenges present enormous pressure to states to develop STI mechanisms on the international stage, where diplomacy and foreign policy drivers us it to steer development and national interests.

Kenya is positioned is a regional power house in terms of economic development. Given its leading position in economic growth in East Africa³, the importance of STI is an indicator towards the realization of Kenya's Vision 2030. Indeed, advances in STI have been on Kenya's strategic focus to drive growth in the economy, owing to the establishment of a number of regional and global companies and institutions keen on leveraging STI opportunities. At the policy level, Kenya's framework is anchored on the STI Act of 2013. Through this Act, a number of institutions mandated with institutionalizing potential direction for STI application were established. The key institutions include: National Commission for Science, Technology and Innovation (NACOSTI), Kenya National Innovation Agency (KENIA) and National Research Fund (NRF). However, while these institutions have brought to the domain of STI, its linkage to diplomacy is a nascent issue in Kenya.

Although STI is an emerging tool in promoting diplomacy, there are still inadequacies in its critical role of promoting Kenya's diplomacy. The aim of this paper is to examine how STI offers a critical pillar for advancing diplomacy discourse. It offers key suggestions on STI and diplomacy development for both Kenya and the African continent at large.

2. CONCEPTUAL FRAMEWORK

This paper is grounded on two key theories, namely Institutional Theory and Positioning Theory. The Institutional Theory by John Meyer and Brian Rowan (1970) posits that organizations in a way shape the societal and to a larger extent, a national and international process. It argues that nations, acting as organizations, can advance their institutional mandate using various avenues; such coercive power or shifting to practices outside power based on the global dynamics. Ideally, the soft-power approach relates to how STI diplomacy trend is a clear tool for collaboration and competition, as a central strategy in political and economic positioning of states to advance diplomacy.

²Ezekiel I. P. Engaging SD for nanotechnology development in Africa. IOP Conf. Ser. Mater. Sci. Eng. 805, 1–12. 10. 2020.

³ Maluki, 2021-Centre for African Studies, 2021).

The theory brings to focus the shift in diplomatic process, where are now utilizing STI programs that reflect their diplomatic interests using institutional lens. For most countries, the intuitional lens is seen through policies that and legal frameworks where institutions are created solely to be a strategic tool of diplomacy-making using STI. For example, China and USA case demonstrates the institutional parameters that both countries are trying to raise, through R&D, technology and innovations that now shape the North-South relations. In this context, institutions such as the Silicon Valley represent just one key area where emergent technologies are used to influence diplomacy.

In view of the above, the role of institutions, under institutional theory, point to the dimensions in the administration of diplomacy, as actors within institutions now play a key role involved, in facilitating STI international cooperation. The theory is thus relevant is examining the nexus between STI and diplomacy in Kenya.

On the other hand, Positioning Theory by Davies and Harre (1990) is a social constructionist approach, based on the assumption that the global environment dictates how states evoke their strategic choices and positions. These positions may range from social, political or economic, and are identified protect national interests or groups. Through strategic positioning, STI acts as a strategic tool through which the diplomatic chain take course. Such practices have been observed in funding of multinationals and enhancing scientific integration through embassies, in areas such as: disease control (COVID-19 vaccines), education, agriculture and energy.

In this regard, positioning theory in diplomacy revitalizes the importance of role theory, in the nature of positions undertaken by diplomats and other actors in the global scene to advance STI policies in international relations. Therefore, Positioning Theory sees the new discourse deployed by STI actors in the international sphere as a form of strategic positioning efforts to open communication, debate and citizen participation in enhancing the self-interest of their nation. Ideally, the open communication and STI cooperation seen through bilateral and multilateral engagement represent part of the positioning strategy of countries like Kenya to address issues such as the COVID-19 pandemic.

3. METHODOLOGY

The paper utilized desk research, utilizing both qualitative and quantitative research approaches. Secondary data was obtained from key sources, including STI policy documents, articles, books, journals, articles and periodicals. The paper also draws explorative insights from several key informants to inform the new trends in the fields of science, technology and innovation and diplomacy. A purposive sample of 16 key informants were drawn from seven key institutions including: National Commission for Science, Technology and Innovation (NACOSTI), National Biosafety Authority (NBA), Kenya Agricultural and Livestock Research Organization (KALRO), Kenya Medical Research Institute (*KEMRI*), *Jommo Kenyatta University of Agriculture and Technology (JKUAT)*, Technical University of Kenya and Ministry of Foreign Affairs (MFA). Data was collected through questionnaires and structured interviews. Descriptive statistical analysis was applied aided by SPSS for quantitative data, while thematic interpretation was used to illustrate the qualitative data.

4. STUDY FINDINGS AND DISCUSSION

4.1. STI and Diplomacy

The findings show that STI has been utilized in various bilateral scientific cooperation with a number of countries through attaches to Embassies and Consulates. These bilateral scientific cooperations are now at the centre stage within various Ministries that act as the special vehicles to steer partnerships with other countries. Such programs are also aimed at harnessing key funding mechanisms to promote diplomatic engagements for economic development. Amongst the key areas include health, agriculture and energy, where states have pushed for bilateral linkages in improving access to medication, reproductive health as well as pandemic research such as the recent COVID-19 pandemic, which has seen various countries collaborate on testing and treatment services. The progress for bilateral scientific cooperation can be identified through agencies such as USAID and UKAID, which demonstrate the strong capabilities that USA and UK hold with regards to STI surveillance. For Kenya, the recent COVID pandemic and the growing urgency of the climate crisis are just some cases that bring to light the STI diplomacy, where scientific cooperation is now a growing foreign policy agenda. Other STI models have been applied in countries such as Israel and South Korea.

4.2. STI and Research and Development

Utilizing R&D initiatives is key in shaping a platform for cooperation and diplomatic action that provides global public goods, currently being applied in other emergency development responses to crises. Within the science diplomacy discourse, academic exchanges and joint research projects, focused mainly on neurosciences; information and communication technologies; renewable energies and social and human sciences; and academic and industrial research have been idealized through bilateral cooperation between Kenya and its partners such as UK, USA, Japan, China, France and Canada. For example, France, through its French Development Agency (AFD), supports research in universities. A long-term partnership between Kenya and France has existed through advances in scientific linkages, including frontiers in education.⁴ On the other hand, the Kenya-Japan cooperation, through JICA has continued to provide support for KEMRI as a core research institute. Through R&D, Japan continues to partner and collaborate with KEMRI to support Kenya's health sector in various capacities including the attainment of universal healthcare as well supporting COVID-19 measures, by providing of supplies and equipment including testing kits and testing consumables.⁵

Scholars such as Naitore⁶ have explored the policy and practical changes that can have a much greater impact where governments apply R&D, given that the 21st Century diplomatic engagements in Africa influence the overall development of a country. In the light of global activities in R&D, essential issues of STI and foreign affairs are now at the core. In this regard, key developments at the national level have been accompanied by the enhanced funding by actors in green energy. Renewable energy is thus at the centre of the global energy landscape, with rising technological advances, combined with innovative policies and financing mechanisms. At a diplomacy-focused point of view, the engagement in bilateral relations and dialogue between countries is bringing experts at these organizations together, aimed at boosting research and dissemination of information important to international relations and policy-making. One of the most important of them is Kenya's Vision 2030, is its emphasis on R&D, innovation meant to establish Kenya as the unchallenged leader in R&D, multinational firms are also establishing offices in Kenya. A flagship of UK-Kenya partnership is the Newton-Utafiti Fund, which enables joint priority setting, matched and in-country direct research funding. In addition, USAID's Partnerships for Enhanced Engagement in Research (PEER) program, managed by US National Academy of Sciences, promotes bilateral and regional cooperation between U.S. federally funded scientists and developing country investigators.

4.3. STI and Bilateral Cooperation in Foreign Direct Investments

Results show bilateral cooperation in STI has been in strengthening STI Systems for sustainable development in supporting critical sectors such as health, education, agriculture, energy, housing and urban transport. The rationale for this is the growing role of STI through the opening up trade cooperation that have necessitated Foreign Direct Investments (FDI) inflow from both international organizations and MNCs. The ability of these corporations to be such strong players in shaping diplomacy is due to their vast wealth and resources. The nexus between STI and FDIs can be seen through various lens. First, FDI opens up the export window opportunity, thereby unlocking the production potential through access to new technological transfer. Second, FDI is a catalyst that triggers the STI spillover-effect and foster bilateral and multilateral cooperation. Lastly, the economic phase aligned to FDI attracts policy review, which can assist companies in expanding internationally and reduce FDI risks. In this way, governments can encourage investor inquiries and disseminate material online, through advertising, trade exhibitions, seminars, and exhibits.

The study shows FDI investments from developing nations continue to have an impact on emerging technology, particularly now that global corporations are supporting regional industrial and manufacturing operations. Due to the increased need for countries to become more competitive in order to increase their export share, FDI acts as a bridge to support diplomatic efforts that can help align development and transfers of new technologies and push multilateral actors channel funds for targeted investments through trade agreements with host country. FDI presents both enormous opportunities and difficulties for the practice of economic diplomacy. The findings hold particularly

⁴NRF. France-Kenya Joint Program Cooperation -PAMOHA PHC. 2022.

⁵JICA: Promoting Development in Kenya: The Growth Path of Japanese ODA. 2021.

⁶Naitore, Dorcas. The 21st Century Diplomatic Engagement in Africa: a Case of Kenya. 2017.

given the rising number of private foreign investor firms, that look for a good environment and strong institution that can champion STI governance to do business, based on local governance and institutions.

4.4. STI and Technological Transfer

The nexus between STI and diplomacy has been applied as a strategy to facilitate national technological transfer and innovation system but not adequate. There exist gaps in strategies and policy, underscoring the need for strategic approaches for optimizations of STI in key sectors aligned to emerging technologies. Results demonstrate measures such as the recent partnership between Kenya and South Korea to improve its education in science and technology, in efforts to produce high-skilled engineers and scientists to propel its Vision 2030. In 2019, the two countries signed a partnership to establish a graduate only university at Kenya's Konza Technopolis. On the other hand, Kenya-Japan cooperation in sectors such as energy, and Kenya-China cooperation in technology projects are projected towards strengthening and supporting green energy and climate change initiatives.⁷In support, Adesina⁸ indicates that technology and diplomacy as a tool of diplomacy, and how countries are utilizing these tools in the pursuit of their foreign policies.

Kenya-Japan cooperation in sectors such as energy, through Olkaria's use of geothermal energy has increased thanks to financial and technical advancements, which have also enhanced transmission. In addition, Kenya-China collaboration has demonstrated its commitment to combating the effects of climate change through its renewable energy initiatives. One of the biggest photovoltaic electricity facilities in Africa is the 50-megawatt solar power station project in the Garissa County in northern Kenya. Regarding partnerships between private businesses, Chinese technology giant Huawei promised to help Kenya advance the use of green energy and speed low-carbon growth. Huawei is also dedicated to supporting student training in green energy technology.⁹

The paper has shown that the nexus between STI and diplomacy can be advanced bilateral scientific cooperation, research and development, FDI, technological transfer and strategic partnerships, particularly in the health sector towards recent COVID-19 pandemic, HIV-AIDS support and climate-agriculture. While these initiatives are key, there is still need for Kenya to provide a platform strategy to harness its own STI policy advancements. In addition, opportunities that attract FDI, promote technology transfer, but often challenged by institutional and policy gaps that limit coordination and bilateral cooperation. Scholars like Rashica¹⁰ argue that diplomatic relations is hence the basis for the significance of STI diplomacy and technology transfer. Therefore, understanding the function and significance of digital diplomacy is essential. Meeting the STI technology transfer goals to advance diplomacy can be significantly aided by digitalization and incorporation into the digital economy. In fields like agriculture, they can have a big impact.

5. CONCLUSION

The implication for these results is that emerging trends in STI can inform the critical role of STI in promoting diplomacy. Kenya's position in leveraging bilateral scientific cooperation, research and development initiatives and collaborations in green energy technology represent some key areas that define STI's role in promotion of diplomacy. On a multilateral front, STI thus lays a platform through to strengthen bilateral and international ties, scholars, institutions, and states can work together. This frequently entails creating networks and working together in places where relationships are solid. In addition, the potential to harness FDI are now being aligned to diplomacy. The potential to harness emerging technologies can greatly augment diplomatic efforts, streamline communication channels that can promote diplomacy. This is because these key areas are opening up spaces for participation of diplomats and advancements in technological transfer and channeling FDI in Kenya, thus bringing out the linkages of STI, FDI and diplomacy.

⁷ Munene Dennis. China and Kenya Foster Cooperation on Climate and Energy. 2022.

⁸ Adesina, Olubukola. Foreign policy in an era of digital diplomacy. *Cogent Social Sciences*19(5):169-189, 2017.

⁹ Munene Dennis. China and Kenya Foster Cooperation on Climate and Energy. 2022.

¹⁰Rashica, Viona. The Benefits and Risks of Digital Diplomacy. *SEEU Review* 13(1):75-89, 2018.

6. RECOMMENDATIONS

First, Kenya should continue to foster, maintain and spread the STI message, and ensure the political discourse promote concrete STI policies that promote national interests. This should be aligned to the growing digital space, and ensure technology-based activities as a whole assist in projecting a Kenya's position to regional and foreign audiences.

Second, Kenya should increase efforts to create a global level playing field, utilizing local STI inventions as key diplomacy tools through targeted funding and institutional support. This could be achieved through linking STI institutions, both public and private, to support universities undertake STI programs through financing mechanisms that attract international STI framework as a tool for harnessing STI diplomacy.

Third, there is need for new models of STI, including public-private partnerships and tapping diasporic communities as key actors that can generate exchange and new knowledge to advance the benefits of STI and diplomacy needed to strengthen strategic partnerships and bilateral cooperation in Kenya.

REFERENCES

- [1] Adesina, Olubukola. Foreign policy in an era of digital diplomacy. *Cogent Social Sciences*19(5):169-189, 2017.
- [2] Bandopadhyay, Amitava. STI Diplomacy and Developing Countries: Current Issues and Challenges. *Research for Development*. 2023.
- [3] Ezekiel I. P. Engaging SD for nanotechnology development in Africa. IOP Conf. Ser. Mater. Sci. Eng. 805, 1–12. 10. 2020.
- [4] GoV-UK. UK-Kenya Strategic Partnership 2020 to 2025: joint statement. 2020.
- [5] Griffiths, Steven. Energy diplomacy in a time of energy transition. *Energy Strategy Reviews*. Volume 26, 2019.
- [6] JICA: Promoting Development in Kenya: The Growth Path of Japanese ODA. 2021.
- [7] Kourti, Andrew: 2020. The Long March to Peace: The Evolution from "Old Diplomacy" to "New Diplomacy."
- [8] Maluki, 2021-Centre for African Studies, 2021).
- [9] Munene Dennis. China and Kenya Foster Cooperation on Climate and Energy. 2022.
- [10] Naitore, Dorcas. The 21st Century Diplomatic Engagement in Africa: a Case of Kenya. 2017.
- [11] Osano, Hezron M.; Koine, Pauline W. Role of foreign direct investment on technology transfer and economic growth in Kenya: A case of the energy sector. *Journal of Innovation and Entrepreneurship*, ISSN 2192-5372, Springer, Heidelberg, Vol. 5, Iss.31, pp. 1-25, 2016.
- [12] UNCTAD. World Investment Report. 2021

Citation: Dr. Christopher Chumba & Dr. Gladys Chepkirui Rotich. "Science, Technology, Innovation and Kenya's Diplomacy: "The Nexus"" *International Journal of Political Science (IJPS)*, vol 9, no. 2, 2023, pp. 22-27. DOI: <https://doi.org/10.20431/2454-9452.0902003>.

Copyright: © 2023 Authors. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.