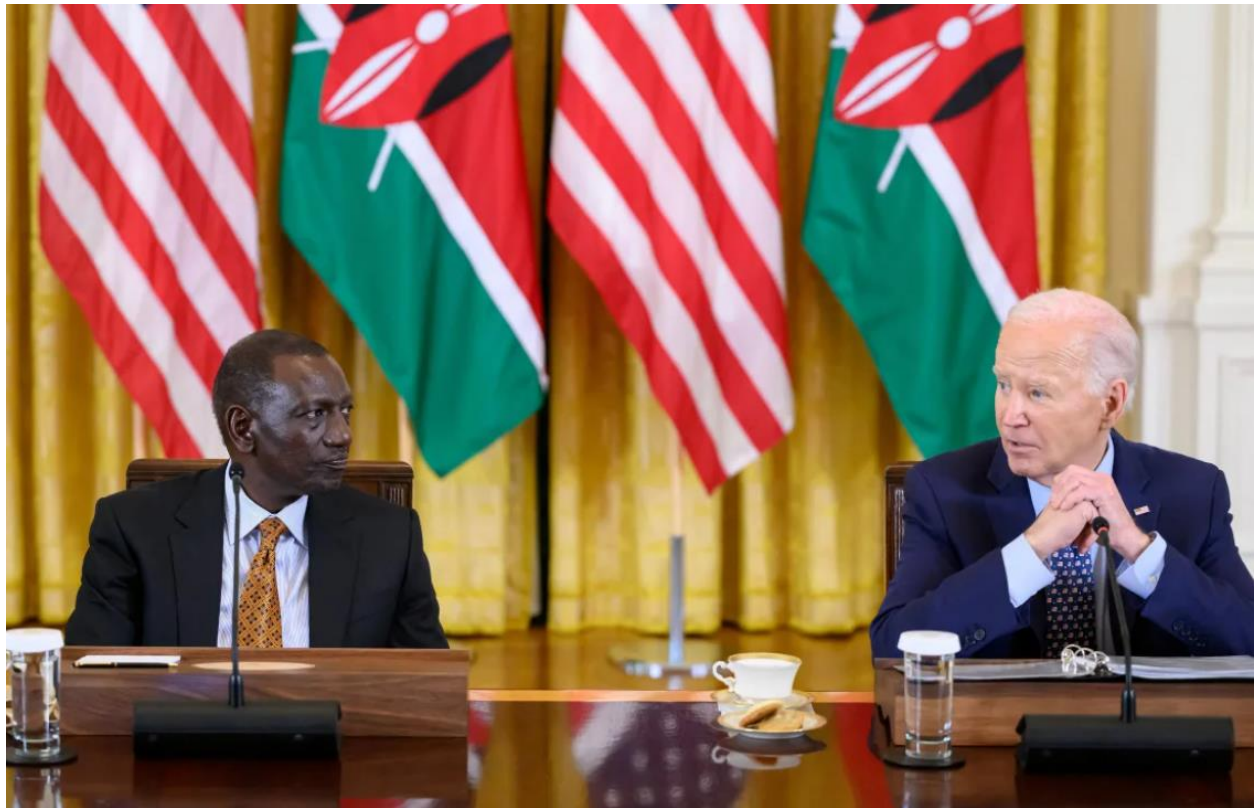


# Sixty years of U.S.-Kenya Partnership

## Forestry Research Collaboration in Climate Change Mitigation

By: Robert Uri Dabaly | July 5<sup>th</sup>, 2024



*Figure 1: Kenya's President William Ruto and U.S. President Joe Biden at White House in Washington, DC on May 22, 2024, IMAGE/CNN*

**K**enyan President William Ruto initially created a State Department for Environment and Climate Change in the Ministry of Environment to forestall the adverse effects of global warming preceding his State visit to the United States and met President Joe Biden. The two leaders showcased how partnership would deliver tangible benefits in shared climate

solutions.<sup>1</sup> Executive Order No. 1 of 2023 assigned functions to the State Department that would not only manifest climate change policy but also forestry development policy and forestry management which includes re-afforestation and agroforestry.<sup>2</sup>

The President Ruto's directive accelerates implementation of his administration's programs for protection, conservation and management of forest resources under its Forest Strategy that details institutional capacity for forest research and technological development, among other things.<sup>3</sup> To supplement revitalization of capacity building to better deal with evolving climate related challenges,<sup>4</sup> the U.S President Joe Biden welcomed Kenya's leadership in hosting the upcoming Smithsonian Forest Global Earth Observatory (ForestGEO) international analytical gathering that facilitates studies on the diversity and dynamics of forests, the forest carbon cycle, and the impact of climate change on forest biodiversity.<sup>5</sup>

The increased frequency or intensity of extreme weather events, such as droughts and floods, are shared global challenges, emanating from inordinate

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<sup>1</sup> Office of the President of the Republic of Kenya, "President Ruto Creates Climate Change Department" (9 January 2023) <https://www.president.go.ke/executive-order-no-1-of-2023-organization-of-the-government-of-kenya/>; & The White House, "FACT SHEET: Kenya State Visit to the United States" (23 May 2024) <https://www.whitehouse.gov/briefing-room/statements-releases/2024/05/23/fact-sheet-kenya-state-visit-to-the-united-states/>

<sup>2</sup> Executive Office of the President, "Executive Order No. 1 of 2023 – Organization of the Government of the Republic of Kenya" The Government Printer (9 January 2023) page 58 <https://www.president.go.ke/wp-content/uploads/Executive-Order-No.-1-of-2023-Organization-of-the-Government-of-Kenya.pdf>

<sup>3</sup> Section 6, Forest Conservation and Management Act Cap. 385; & Rules 2 and 5, The Forests (Participation in Sustainable Forest Management) Rules No. 34 of 2016.

<sup>4</sup> Ministry of Environment, Climate Change & Forestry, Strategic Plan 2023 – 2027 (27<sup>th</sup> July 2023) pages 20 – 24. <https://environment.go.ke/downloads/>

<sup>5</sup> The White House, "FACT SHEET: Kenya State Visit to the United States" & ForestGEO, "2024 Analytical Workshop" <https://forestgeo.si.edu/training-and-fellowships/2024-analytical-workshop>

variations in temperature and rainfall patterns that also contributed to biodiversity loss. Exacerbated by land degradation as over eighty percent of land in Kenya is classified as arid and semi-arid which makes it necessary for analytical gatherings like the ForestGEO network, since attendant solutions to soil fertility, erosion reduction, and sustainable land management practices should ensure greater protection of natural resources, as well as cushion the international community's exposure to adverse effects of global warming.<sup>6</sup>

### **Forests in climate change mitigation**

Forests are woody vegetation growing in close proximity in an area of over 0.5 of a hectare including a forest in the process of establishment, such as woodlands and thickets.<sup>7</sup> A broader definition would be all land bearing vegetation dominated by trees capable of producing wood, or other products of exerting influence on the climate or water regime and may also provide shelter to livestock and wildlife.<sup>8</sup> Climate change, geological substrate, soil fertility, vegetation, natural and anthropogenic disturbances bring about variances in forest structure and composition.<sup>9</sup> Some scholars argue that industrialized countries should both recognize their reliance upon tropical forests in foreign relation policies, and consider reducing exportation of wood from tropical countries, as

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<sup>6</sup> Ministry of Environment, Climate Change & Forestry, Strategic Plan 2023 – 2027, page 20.

<sup>7</sup> Section 2, Forest Conservation and Management Act Cap. 385

<sup>8</sup> D. Schoene and M. Netto (2005) The Kyoto Protocol: what does it mean for forests and forestry? *Unasylva* 222:56  
<https://www.fao.org/4/a0413E/a0413E02.pdf>

<sup>9</sup> Asner, G. P., J. Mascaro, H. C. Muller-Landau, G. Vieilledent, R. Vaudry, M. Rasamoelina, J. Hall, and M. van Breugel (2012) A universal airborne LiDAR approach for tropical forest carbon mapping. *Oecologia*. DOI 10.1007/s00442-011-2165-z. Published online 28 October 2011

it would expedite sustainable management, through imposition of appropriate tariffs and quotas.<sup>10</sup>

Ruto administration's strategic objectives are to: strengthen environment, climate change and forestry governance; reduce environment and land degradation; and to enhance agroforestry development through strengthening the value chain and commercial forestry, among others may be realized not only by adoption of land, under climate resilience management, but also by enhanced awareness of environmental management and protection measures, through technical or policy briefs that support the efficacy of resource mobilization for sustainable management of forest ecosystem.<sup>11</sup>

USAID is a development partner of Kenya's Ministry of Environment, as it provides support and sustainable investments in carbon markets, or where economic incentives align with large-scale forest conservation.<sup>12</sup> The agency works with local communities, governments, and institutions to strengthen capacity to assess and manage climate risks, in addition to increasing equitable access to finance for reforestation that reduces flood risks.<sup>13</sup>

### **Research collaboration**

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<sup>10</sup> John Kipkoech Chebii (2015) Forest Management and Conservation in Kenya: A Study of the Role of Law in the Conservation of Forest Resources. *University of South Africa*. LLD Dissertation. page 124.  
<http://hdl.handle.net/10500/20093>

<sup>11</sup> Ministry of Environment, Climate Change & Forestry, Strategic Plan 2023 – 2027 pages 31 & 40.

<sup>12</sup> U.S. Agency for International Development, "Forest Conservation: Natural Climate Solutions"  
<https://www.usaid.gov/climate/natural-solutions/forest-conservation>

<sup>13</sup> USAID, Climate Strategy 2022 – 2030 (April 2022) pages 18 &19 <https://www.usaid.gov/sites/default/files/2022-11/USAID-Climate-Strategy-2022-2030.pdf>

Kenya Forestry Research Institute (KFRI) structured its operations on the following themes: forest productivity, health and tree improvement; forest biodiversity, climate change and environment management; forest products and entrepreneurship development; socio-economics, policy and governance; and forest research support services, among others.<sup>14</sup> This institute may obtain valuable insights or technological applications from ForestGEO since the network recognizes the importance of collaboration with KFRI to strengthen science capacity in order to improve understanding and prediction of forest dynamics in rapidly changing landscapes and climate.<sup>15</sup>

U.S – Kenya ties should sort out implementation challenges related to inadequate funding for conservation and management projects. Also, foster capacity building accompanied by active leadership in climate action, through meaningful participation of stakeholders.<sup>16</sup> Furthermore, the emergence of big data and application of artificial intelligence in environmental monitoring, data analysis, modeling, and prediction, as well as maintaining coherence in Kenya’s carbon market requires continued cooperation, to activate technological solutions or to spur green investments.<sup>17</sup>

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<sup>14</sup> Section 22, Forest Conservation and Management Act Cap. 385; & Kenya Forestry Research Institute, “Our vision & Mission” <https://www.kefri.org/components/vision/vision.html>

<sup>15</sup> ForestGEO, “What is ForestGEO” <https://forestgeo.si.edu/what-forestgeo>

<sup>16</sup> Ministry of Environment, Climate Change & Forestry, Strategic Plan 2023 – 2027, pages 32 & 33.

<sup>17</sup> USAID, Climate Strategy 2022 – 2030 page 6 & A World Bank Group and Kenya Private Sector Alliance (2024)

Carbon Market Guidebook for Kenyan Enterprises, World Bank, Washington, DC

<https://documents1.worldbank.org/curated/en/099040424053541073/pdf/P1796801e6f92d053187b01916665fc998d.pdf>

ForestGEO offers Kenya unique long-term and large-scale data sets that will enable scientists to upgrade their explanations of mechanisms and processes relating to tropical forests, since knowledge on both temperate and tropical plots are essential for comprehensively evaluating climate change or ecological viability of responses.<sup>18</sup> For instance, ForestGEO's permanent forest dynamics census plots are used for simulations in development of strategies for conservation of plant diversity in sustainable forestry by using rapid assessment to generate a complete coverage of proxies for underlying species richness in a local forest since the census is carried out and linked to the rapid assessment proxies.<sup>19</sup>

Smithsonian Tropical Research Institute funded scientific research that confirmed, for example, forest disturbance and climate factors are the main drivers of liana dominance in global forests which affects forest dynamics, and these findings are crucial for understanding impacts of global carbon sink, forest recovery from disturbance, timber yields, and resilience to climatic change.<sup>20</sup>

## Conclusion

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<sup>18</sup> ForestGEO, "Research Programs" <https://forestgeo.si.edu/research-programs>

<sup>19</sup> Bo-Hao Perng, Tzeng Yih Lam, Su-Ting Cheng, Sheng-Hsin Su, Kristina J. Anderson-Teixeira, N.A. Bourg, D.F.R.P. Burslem, N. Castaño, Á. Duque, S. Ediriweera, N. Gunatilleke, J.A. Lutz, W.J. McShea, M.D. Md Sabri, V. Novotny, Michael J. O'Brien, Glen Reynolds, George D. Weiblen, Daniel Zuleta (2024). Mapping distribution of woody plant species richness from field rapid assessment and machine learning. *Taiwania* 69 (1): 1-15. DOI: 10.6165/tai.2024.69.1 <https://taiwania.ntu.edu.tw/pdf/tai.2024.69.1.pdf>

<sup>20</sup> Ngute, A. S. K., Schoeman, D. S., Pfeifer, M., van der Heijden, G. M. F., Phillips, O. L., van Breugel, M., Campbell, M. J., Chandler, C. J., Enquist, B. J., Gallagher, R. V., Gehring, C., Hall, J. S., Laurance, S., Laurance, W. F., Letcher, S. G., Liu, W., Sullivan, M. J. P., Wright, S. J., Yuan, C., & Marshall, A. R. (2024). Global dominance of lianas over trees is driven by forest disturbance, climate and topography. *Global Change Biology*, 30, e17140. <https://doi.org/10.1111/gcb.17140>

Kenya's bottom-up economic transformation agenda should achieve expeditious fruition with the assistance of the U.S. The leveraging of research and technological advancements, in the formulation and application of sustainable solutions, for effective rejuvenation of conservation measures, to restore ecological functions of forest ecosystems should deliver socio-economic, or environmental benefits for inhabitants.

The upcoming Smithsonian ForestGEO international gathering in Kenya may impart credible findings for policy makers in their consideration of feasible forest management policies against effects from both natural and anthropogenic disturbances, and also assist conservationists in determining the most suitable use of forest resources strained by rapid economic growth.

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