IMPACT REPORT 2016-2019

SILVACARBON AFRICA PROGRAM

The forests of the Congo Basin are among the most important in the world, harboring an estimated 8 percent of the earth's forest-based carbon and supporting more than 80 million people who depend on forest resources for food, shelter, and livelihoods. These forests also host tremendous biodiversity, sustain national and regional economies, and influence the global climate system through carbon storage and sequestration. Unfortunately, forested areas are declining throughout the Congo Basin and are under increasing threat from ongoing deforestation and forest degradation, with potentially devastating and irreversible implications for local populations and the world.

To facilitate the sustainable use of the Congo Basin's critical forest landscapes, decision-makers, communities, and other stakeholders must have access to reliable, up-to-date information about the state of forest resources and how they are changing over time. Forest resource information — including estimates of forest cover, forest carbon stocks, and greenhouse gas emissions resulting from forest loss — is the foundation for sustainable forest management, and provides a basis for sound decision-making across a range of different sectors. With this in mind, the SilvaCarbon program is working with partners across the region to generate and effectively use forest resource information.

SilvaCarbon is an interagency technical cooperation program of the U.S. Government to enhance the capacity of selected tropical countries to measure, monitor, and report on carbon in their forests and other lands. Drawing on expertise and resources from multiple U.S. Government agencies, SilvaCarbon assists partner countries in the design, development, and implementation of national forest monitoring systems that support sustainable landscapes. SilvaCarbon is funded by the U.S. Agency for International Development (USAID) and the U.S. Department of State, and is jointly implemented by the U.S. Forest Service (USFS) and the U.S. Geological Survey (USGS).

WHAT WE DO

National forest monitoring systems integrate different types of data to produce accurate, transparent forest resource information to support a variety of national and international objectives including land use management and planning, policy and strategy development, international reporting compliance, and participation in results-based sustainable development mechanisms such as REDD+. Forest monitoring systems typically include three interconnected components: a ground-based forest inventory component, a remote sensing component, and a greenhouse gas inventory component. SilvaCarbon collaborates with government, academic, and non-governmental partners throughout Africa to strengthen country capacities across each component and, importantly, integrate these components in holistic, sustainable systems tailored to national needs.

Since 2011 SilvaCarbon has provided targeted technical support to government partners in **Cameroon**, the **Democratic Republic of the Congo (DRC)**, and the **Republic of the Congo (ROC)** focused on national forest carbon monitoring and Measurement, Verification and Reporting (MRV), complementing prior support from the U.S. Forest Service and the ongoing USAID Central Africa Regional Program for the Environment (CARPE). SilvaCarbon has also collaborated with the government of **Gabon**, supporting national forest inventory implementation and the integration of remote sensing data for improved forest monitoring and carbon estimation. In 2018, SilvaCarbon began collaborating with the World Bank BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL) to assist **Ethiopia** and **Zambia** to track and reduce emissions in the forest and agricultural sectors. In the **Republic of the Congo**, the U.S. Forest Service also hosts a Climate Fellow, supported by the U.S. Department of State, who serves as an advisor to the government on forest carbon monitoring and MRV in collaboration with SilvaCarbon.

U.S. GOVERNMENT PARTNERS

UNIVERSITY PARTNERS

GOVERNMENT PARTNERS

OTHER PARTNERS

CENTRAL AFRICA REGIONAL PROGRAMMING

◊ SilvaCarbon provides ongoing support for South-South technical exchange and learning opportunities between Congo Basin countries focused on estimating forest degradation, incorporating peatlands in national forest inventories, and operationalizing national forest monitoring systems.

◊ SilvaCarbon provided technical training in carbon accounting to key partners throughout the region in order to build practical skills in the use of forest carbon data for sustainable landscapes.

◊ Technical partners in DRC, ROC, and Cameroon frequently coordinate production of their forest cover change maps using regional forest definitions, engaging in horizontal partnerships to leverage their complementary strengths, with AGEOS serving as a regional center for SilvaCarbon technical support.

CAMEROON

◊ SilvaCarbon is assisting with the design and implementation of a robust national forest monitoring system, including the assessment of forest cover and land use, in collaboration with the national REDD+ Steering Committee, Department of Forest Inventory and Management under the Ministry of Forests and Fauna, and National Observatory of Climate Change.

DEMOCRATIC REPUBLIC OF THE CONGO

◊ SilvaCarbon is working with the Ministry of Environment and Sustainable Development and other technical partners, including the Food and Agriculture Organization of the United Nations, in the design and implementation of the national forest monitoring system. SilvaCarbon has advised the Ministry on inventory sampling and analysis methodologies and organized trainings for government technicians on forest inventory field methods for peatland forests, and the analysis of forest inventory data and forest cover change. SilvaCarbon has been supporting these and related efforts since 2010 and is a member of the national technical working group.

GABON

◊ Since 2017, a SilvaCarbon partnership between USGS, Google, and NASA has provided technical training in key remote sensing tools and methods, contributing to capacity building for the Gabon Space Agency (AGEOS) and fostering enhanced technical cooperation among other Congo Basin countries.

◊ From 2011-2015, SilvaCarbon assisted the National Climate Council, the National Park Agency, and the Ministry of Water and Forests in the design and implementation of its first national forest inventory and the estimation of biomass carbon, under the USAID Low Emission Development program. From 2015 onward the assistance shifted towards the use of earth observation data to produce estimates of forest loss by deforestation and degradation.

REPUBLIC OF THE CONGO

◊ SilvaCarbon has been working with the National Forest Inventory Agency to finalize the national forest inventory, assisting with the incorporation of difficult-to-access, carbon-rich wetland forests. SilvaCarbon has also provided satellite data and technical assistance to strengthen the use of remote sensing technology for forest monitoring, and collaborates closely with the Department of State Climate Fellow program in the development of the national MRV system.

BIOCARBON FUND INITIATIVE FOR SUSTAINABLE FOREST LANDSCAPES

◊ In Ethiopia and Zambia SilvaCarbon is working with the Oromia Forested Landscape Program (Ethiopia) and the Zambia Environmental Management Agency and the Forestry Department (Zambia) to meet ISFL emission reduction program requirements. Current support is focused on developing forestry emission factors and strengthening MRV for agriculture, including livestock emissions.

KEY SUCCESSES AT A GLANCE

ACROSS CENTRAL AFRICA

◊ Trained over 200 government officials, university professors, and technical partners throughout the region in terrestrial carbon accounting, forest inventory methodologies, remote sensing tools and methods, and other key forest monitoring topics

◊ Supported Gabon's AGEOS to integrate optical data with radar data for forest degradation mapping, and facilitated South-South collaboration among Congo Basin countries under AGEOS leadership

◊ Assisted ROC and DRC to include wetland forests in their national forest inventories for improved land management and more accurate GHG emissions estimation

◊ Assisted Cameroon, DRC, and ROC to submit their forest reference emission levels, and provided training to facilitate the inclusion of degradation estimates in their next submissions

◊ Supported DRC's first comprehensive national forest inventory through targeted technical assistance in inventory design, data collection and data analysis

◊ Coordinated the establishment of a National MRV Taskforce in ROC to support the institutionalization of the national forest monitoring system

◊ Advanced the operationalization of national forest monitoring systems in six francophone African countries through the sharing of best practices and lessons learned

◊ Facilitated international alliances with the Group of Earth Observations Global Forest Observation Initiative (GFOI), resulting in new partnerships and improved coordination to support forest monitoring globally.

OVER 200 GOVERNMENT OFFICIALS, UNIVERSITY PROFESSORS, AND TECHNICAL PARTNERS TRAINED IN TERRESTRIAL CARBON ACCOUNTING, FOREST INVENTORY METHODOLOGIES, AND FOREST MONITORING THROUGHOUT THE REGION.

MEET SOME OF OUR PARTNERS

"IT IS A HUGE OPPORTUNITY FOR OUR COUNTRY, AND OUR REGION, TO MASTER TERRESTRIAL CARBON ACCOUNTING. FOR MY STUDENTS, IT IS AN OPPORTUNITY FOR THEM TO DO CUTTING EDGE RESEARCH USING THESE METHODS. ALREADY THEY HAVE DONE WORK THAT IS HELPING OUR GOVERNMENT MAKE VITAL DECISIONS ABOUT FOREST MANAGEMENT AND CLIMATE CHANGE POLICY. WITHOUT THESE TRAININGS, THIS WOULD NEVER HAVE HAPPENED."

FELIX KOUBOUANA
MARIEN NGOUABI UNIVERSITY, REPUBLIC OF THE CONGO

Through SilvaCarbon, the U.S. Forest Service partnered with The Carbon Institute to provide specialized training opportunities for government officials and university professors across Central Africa who are committed to protecting their forests and mitigating the effects of climate change. Since 2015, more than 75 key individuals have been trained in internationally accepted methods of terrestrial carbon accounting.

Professor Felix Koubouana, who teaches at Marien Ngouabi University in the Republic of the Congo, was trained under this program and now teaches these methods to his own students.

"It is a huge opportunity for our country, and our region, to master terrestrial carbon accounting," said Professor Koubouana. "For my students, it is an opportunity for them to do cutting edge research using these methods. Already they have done work that is helping our government make vital decisions about forest management and climate change policy. Without these trainings, this would never have happened."

Basile Mpati was trained by SilvaCarbon in wetland forest inventory methods in his home country of the Republic of the Congo starting in 2014. He soon became a national expert on the subject, and was able to share his expertise to assist counterparts in other countries. In 2018 he crossed the Congo River to lead a training on the topic for a team of government technicians in the Democratic Republic of the Congo. Following the training, Mr. Mpati took the team deep into the forest to help them begin the first inventory of their country's vast, previously unquantified peatland forests. Through continued hands-on application of what they learned in the training, the Democratic Republic of the Congo now has an experienced cadre of technicians who have since completed the rest of the peatland forest inventory, representing a significant milestone in the nation's sustainable landscape efforts.

"We may be two separate countries, but we share the same forests," Mr. Mpati said. "To be able to transfer this knowledge about wetland forests and train my government counterparts in the Democratic Republic of the Congo is hugely important and essential work. If we as a region fail to protect these forests, the ecological results will not only be damaging for the people here, who depend on the forests for food and fuel, but the amount of carbon that will be released into the atmosphere will be devastating for the rest of the world as well."

"IF WE AS A REGION FAIL TO PROTECT THESE FORESTS, THE ECOLOGICAL RESULTS WILL NOT ONLY BE DAMAGING FOR THE PEOPLE HERE, [...] BUT THE AMOUNT OF CARBON THAT WILL BE RELEASED INTO THE ATMOSPHERE WILL BE DEVASTATING FOR THE REST OF THE WORLD AS WELL."

BASILE MPATI
NATIONAL CENTER FOR FOREST INVENTORY AND ZONING, REPUBLIC OF THE CONGO

SilvaCarbon is helping Cameroon address its increasing environmental pressures by providing targeted technical assistance in the national REDD+ process. In collaboration with the National REDD+ Steering Committee, SilvaCarbon is supporting the design and implementation of a comprehensive national forest monitoring system that is tailored to Cameroon's unique challenges and opportunities.

Tatiana Nana has been an MRV Specialist with the Ministry of Environment, Nature Protection and Sustainable Development (MINEPDD) in Yaoundé, Cameroon, since 2016. She spends her days pouring over data and using remote sensing and GIS tools to assess land cover change and develop the country's Forest Reference Emission Levels (FRELs) and forest loss maps. FRELs are an integral part of the REDD+ process and are required for countries to be eligible to receive results-based payments for reducing emissions from forest loss. Forest loss maps indicate forest change over time, allowing decision-makers to identify priority areas, identifying the causes of change, and implement programs to help communities manage forest resources more sustainably.

For Tatiana, her work is more than just a job. "Participating in the development of my country is my primary motivation," she said. "I am passionate about digging into cutting-edge methods and technologies to produce reliable data on the evolution of carbon stocks in forests. We hope to continue to rely on SilvaCarbon technical support via trainings, technical workshops and the sharing of data and technology."

"I AM PASSIONATE ABOUT DIGGING INTO CUTTING-EDGE METHODS AND TECHNOLOGIES TO PRODUCE RELIABLE DATA ON THE EVOLUTION OF CARBON STOCKS IN FORESTS. WE HOPE TO CONTINUE TO RELY ON SILVACARBON TECHNICAL SUPPORT VIA TRAININGS, TECHNICAL WORKSHOPS AND THE SHARING OF DATA AND TECHNOLOGY."

TATIANA NANA
REDD+ TECHNICAL SECRETARIAT, CAMEROON
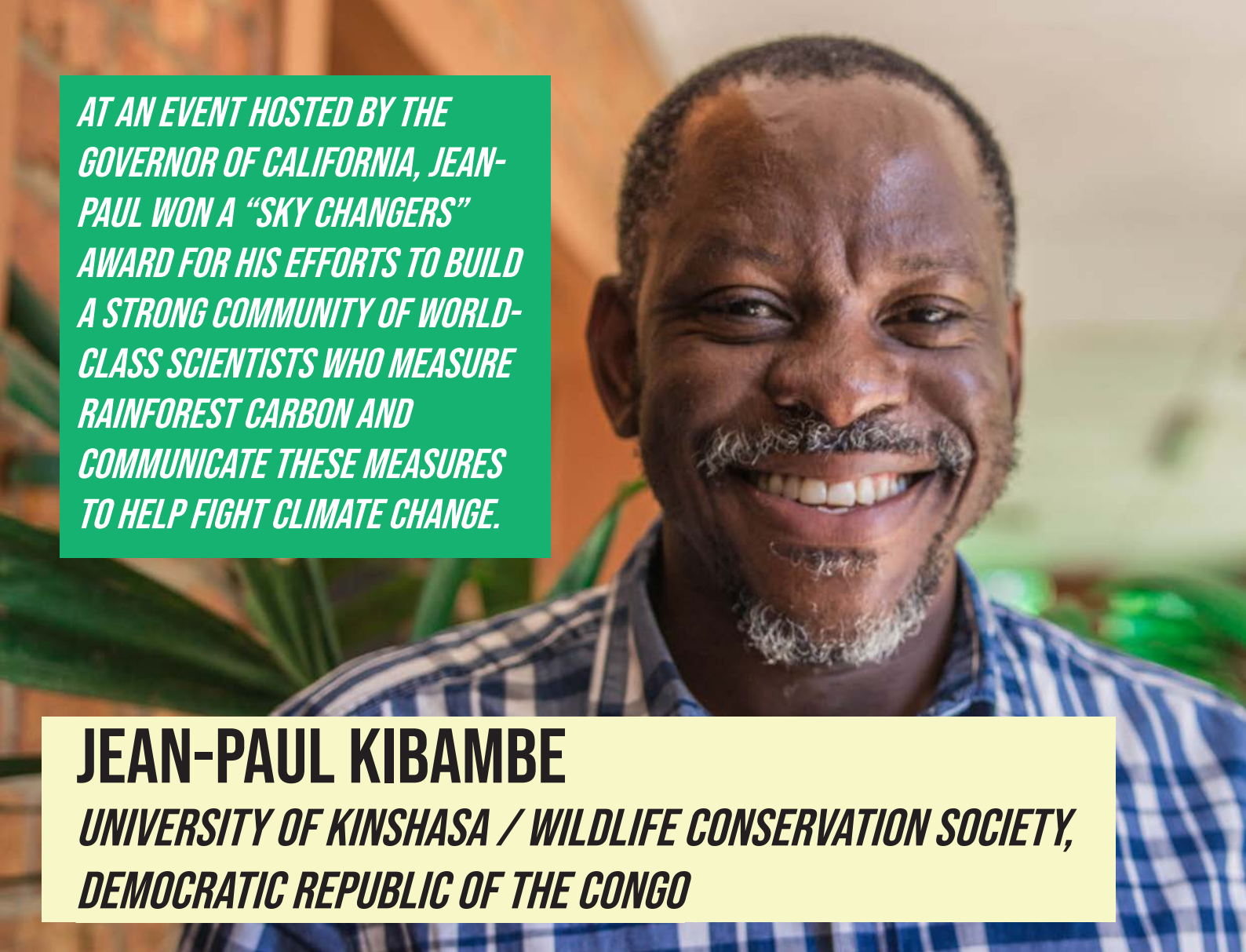
AT AN EVENT HOSTED BY THE GOVERNOR OF CALIFORNIA, JEAN-PAUL WON A "SKY CHANGERS" AWARD FOR HIS EFFORTS TO BUILD A STRONG COMMUNITY OF WORLD-CLASS SCIENTISTS WHO MEASURE RAINFOREST CARBON AND COMMUNICATE THESE MEASURES TO HELP FIGHT CLIMATE CHANGE.

JEAN-PAUL KIBAMBE
UNIVERSITY OF KINSHASA / WILDLIFE CONSERVATION SOCIETY, DEMOCRATIC REPUBLIC OF THE CONGO

Jean-Paul Kibambe wears many hats. At the University of Kinshasa, he teaches the next generation of Congolese climate scientists how to use satellite images and conduct field work to estimate the amount of carbon in the different ecosystems of the Congo's rainforests. He also serves as the Democratic Republic of the Congo Country Director for the Wildlife Conservation Society, a non-governmental organization where he previously worked as the GIS and Climate Change Coordinator. In yet another role, he serves as an environmental science advisor to the Congolese government, responsible for national efforts to quantify forest carbon stocks in collaboration with domestic and international partners.

In May 2019, Jean-Paul participated in a SilvaCarbon training on terrestrial carbon accounting organized by the U.S. Forest Service, the Carbon Institute, the Cameroon-based Regional Center for Agricultural Education, and Marien Ngouabi University in the Republic of the Congo. During the training, Jean-Paul and his colleagues developed a specialized course curriculum designed for university students across the Congo Basin.

Following the training, Jean-Paul was invited to join a network of Carbon Institute scientists attending the Global Climate Action Summit in California. At an event hosted by the Governor of California, he won a "Sky Changers" award for his work to protect the Congo Basin rainforest through research, teaching, and policy. Professor Kibambe was recognized for his efforts to build a strong community of world-class scientists who measure rainforest carbon and communicate this information to help address climate change. Jean-Paul plans to continue this work, using the course curriculum he and his colleagues developed with SilvaCarbon support, to help his students follow in his footsteps.

Over the next five years SilvaCarbon plans to continue working with partners across Africa to foster sustainable landscapes by strengthening capacities for measuring, monitoring, and reporting on terrestrial carbon. This SilvaCarbon Strategy for 2020-2025 focuses primarily on countries in Central Africa, and includes additional targeted support for ISFL objectives in Ethiopia and Zambia.

Strategic Priorities for 2020-2025:

1. Improved compliancy in national reporting to the UNFCCC including continued support to strengthen and operationalize countries' National Forest Monitoring Systems and improve national greenhouse gas inventories
2. Institutional strengthening including development of standard operating procedures with a focus on data management and access
3. Enhanced communication of information and data for decision makers for more informed and better management decisions
4. General capacity development on carbon accounting to enlarge the pool of experts at national and provincial levels to support decentralized MRV and jurisdictional REDD+ programming with a specific focus on promotion and development of female experts and technicians
5. Support to ISFL programs to meet the emission reduction program requirements

SilvaCarbon will continue to coordinate and harmonize its programming with other local and international partners, including the Global Forest Observation Initiative, to ensure complementarity and cost-effectiveness and maximize overall impact.