



CALESTOUS JUMA LEGACY FOUNDATION
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Calestous Juma Legacy Foundation (CJLF) Bunyala Projects

*DRIVING INCLUSIVE CAPACITY-BUILDING IN SCIENCE, TECHNOLOGY,
AND INNOVATION, IN BUNYALA SUB-COUNTY, KENYA*

Our Mission: To promote and apply science, technology, and innovation (STI) to inspire sustainable development in Africa.

Our Values: Operating based on mutual trust and centering the needs of the community.

- ❖ Seeding and building a belief in local learning and action
- ❖ Using local knowledge, infrastructure, and other local resources
- ❖ Adding value to existing initiatives
- ❖ Clearly articulating vision and resource limitations
- ❖ Building local capacity and momentum
- ❖ Working through and for enduring partnerships
- ❖ Maintaining initiatives as non-governmental, not-for-profit, and not political

Science, Technology & Innovation (STI) For All: *Making 21st century tools accessible to everyone.*

“Rural poverty is associated with factors such as poor infrastructure and logistics, inappropriate education and low skill levels, inadequate levels of capital investment in new businesses, and lack of access to markets for new products and services. Solving these challenges will contribute to the creation of meaningful jobs for the youth and for women. Priority areas include nurturing creativity, advancing experiential learning, fostering computing and data analytics, promoting agricultural innovation, applying medical technology, and protecting the environment.” – Calestous Juma (9 June 1953–15 December 2017)

Professor Calestous Juma was a world-renowned authority in the application of science, technology and innovation to sustainable development. His research focused on analyzing the co-evolution of technological innovation and institutional change in socio-economic systems. He directed programs that advanced science, technology and innovation policy research (especially biotechnology), provided high-level STI advice, and promoted the conservation of biological diversity. Port Victoria, Kenya, on the shores of Lake Victoria, was his birthplace.

The needs in Bunyala sub-county:

Fishing pervades nearly every aspect of life in Bunyala sub-county, in Kenya's Busia County on the shores of Lake Victoria, Africa's largest body of freshwater. Despite the fact that fishing is the region's primary economic activity, the local population struggles to get enough protein to eat. This is primarily due to ecological changes associated with climate change, overfishing and international demand for and trade in fish and fish products.



Lack of access to clean water also poses a significant challenge to the community, resulting in high levels of communicable diseases and inadequate irrigation of farmlands, which are already challenged by difficult terrain and the growing effects of climate disruption. Poverty, poor nutrition, and disease all make it difficult for students to focus, resulting in poor academic performance and high dropout rates. They say talent is universal, but opportunity isn't. The next Calestous Juma might be in Bunyala or somewhere else in Africa right now.

We chose to make an impact here not only because it's the late Professor Calestous Juma's home region and final resting place, but also because there is already tremendous good will towards the Juma family and community support for our organization. Beginning in 2018, we conducted a formal needs assessment, made several site visits, and began working with a group of local advisors and stakeholders. We used the period of the COVID19 pandemic to build strong partnerships with the community and local institutions. We are now ready to move forward and have hired a local project coordinator.

The solutions to Bunyala's interconnected problems will require the community to increase local capabilities, which will necessitate access to information, inspiration, and training. This will in turn spark the mindset change needed to address the many challenges. We intend to target those in the community who stand to benefit the most and are eager to help bring about change that will benefit the entire community: specifically girls, women, and young people.

Decades of research in developing countries have shown that women invest disproportionately in their communities when compared to men, yet the women of Bunyala are largely excluded from economically prosperous enterprises. We want to put women at the center of change, support them on their journeys of learning and economic empowerment, and help to remove the barriers to their full participation in economic opportunities.

Africa, like the rest of the world, is rapidly increasing its use of information and communication technology (ICT) in many aspects of daily life, including education, banking services, and market access. Young people are the most frequent technology users and beneficiaries. In Kenya, however, not everyone has equal access to ICT, and youth in rural areas frequently lack access to technology training, hardware, and software. As a result, their options for furthering their education and exploring job markets are limited.

What will CJLF do?

At the **Calestous Juma Innovation and Resource Hub (CJ Hub)** in Port Victoria we will provide access to information and training relevant to the Bunyala community. The Hub will be equipped with 10-15 computer stations with internet access and will have space for innovation demonstrations and workshops. The CJ Hub will also house a curated digital library pre-loaded with community-relevant information, and we will help community members access that information.

Community members will take part in training programs in content areas identified by the community as priorities. We intend to provide digital literacy and basic computer skills, as well as personal and professional growth opportunities through exposure to new ideas and



information that can open minds to innovation and positive change. We'll pair those fundamental 21st-century skills with additional opportunities to learn entrepreneurship, leadership, financial literacy, and other discipline-specific skills for those who are interested. This will be combined with hands-on practical training in aquaculture and related farming opportunities, with an emphasis on local innovation.

We will also identify candidates for train-the-trainer courses in all areas and offer paid positions to qualified candidates who graduate to be our trainers. We will match members of our community with volunteer mentors from within the community as well as the larger international Bunyala diaspora.

This Hub will provide the venue to welcome guest speakers, workshops, and community discussion groups. We will set up a demonstration area where local innovations can be displayed and shared.

Beginning with an 18-month pilot program, we will engage the local community, as well as Kenyan and international partners, in an ongoing participatory process of identifying and implementing course content. In the course design and delivery, we will prioritize local knowledge and practices. We will create a sense of community ownership of the CJ Hub through this process. We will revisit and improve the programming on a regular basis to better reflect the needs of the community.

The pilot program will contribute directly to the attainment of global Sustainable Development Goals (SDGs), particularly SDG2 (ending hunger and malnutrition), SDG4 (quality education) and SDG8 (employment and economic empowerment in general). By the end of the pilot phase, our goal is to have developed a cohort of local staff with the skills required for local operation and management of the CJ Hub as well as a local Advisory Board with seats on the CJLF Board of Directors.

Our partners:

Our partners have extensive experience and expertise in African sustainable development, and they firmly believe that change must be owned and driven at the community level. We intend to continue to seek partners who share our values.

The African Centre for Technology Studies (ACTS), based in Nairobi, is CJLF's primary partner and serves as the institutional host for our activities in Africa. They are a supporting partner of this project.

Building on the tremendous good will towards the Calestous Juma name, we are in various stages of building partnerships with local NGOs, local aquaculture enterprises, local faith organizations, primary and secondary schools in Port Victoria, local Technical Vocational Institutes, Jaramogi Oginga Odinga University of Science and Technology (JOOUST - Bondo, Kenya), Strathmore University (Nairobi, Kenya), Kenya Marine and Fisheries Research Institute (KMFRI - Kisumu, Kenya), Lake Victoria Development Authority (LVDA - Uganda), UN Food and Agriculture Organization (FAO), African Union Development Agency (AUDA-NEPAD), African Center for Aquatic Research and Education (ACARE - USA), The I Will Projects (USA), Taiwan



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Africa International Service Association (TAISA - Taiwan), Kiddo Byte (USA), Massachusetts Institute of Technology (MIT - USA), Boston University (USA), and others.

Our partners are committed to contributing their expertise to our locally relevant educational programming that meets the needs of the community. We, in turn, connect to a local community that is eager to embrace sustainable development and has a high regard and trust in our organization. We take that trust very seriously and promise to do everything in our power to earn and keep it.

What we need:

We are seeking \$100,000 to fund an 18-month pilot period, which will provide us with an adequate operational budget to implement the CJ Hub in Port Victoria. The funds will be used to support our transformative programming, which will train Bunyala community members in the skills they need to improve their economic, health, and educational outcomes. Costs are rising globally, and information and training are expensive and difficult to obtain in Bunyala sub-county; our goal is to remove those barriers.

These funds will enable us to purchase 10-15 computers and peripherals, networking equipment, as well as pay for security, staff, maintenance and utilities for the 18 months.

There is a high demand for skill development and infrastructure to deliver needed relevant training. We require seed funding to support the pilot phase, which will include monitoring and evaluation. We will apply for grants before the 18-month period is up to support the next phase of scaling up and broadening our training curriculum.

Anticipated outcomes of 18 month pilot phase:

Staff trained:

- We will train six community members and hire them to staff the CJ Hub and support the basic training courses during our 18-month pilot period.
- We will train four local Scratch Coding Coaches and hire them to coach at the CJ Hub.

Community participation:

- We will equip over 100 members of the community with basic computer and digital literacy skills training.
- We will teach ICT Scratch coding to 80 local secondary school students, in order to provide them with a fundamental understanding of coding concepts.
- We will train 50 local women in practical aquaculture and/or related skills for enterprise development.
- We will help to expose the youth and institutions in Bunyala to international innovation networks through enduring strategic partnerships.
- We aim for at least eight weeks of basic skills engagement with community members and one term with secondary school students.



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More advanced computer skills training, such as coding, will be provided by volunteers and non-profit organizations. Skills such as website creation, digital marketing, graphic design, data science, cloud computing, photography and video production, and other areas are in high demand for job seekers, and training in these areas may be available if identified in our participatory process of course design. The number of people trained in these disciplines will vary according to interest, instructor availability, and curriculum.

Our ultimate goal is to improve nutritional security, increase economic incomes, support gender equity, and strengthen the social wellbeing of communities in Port Victoria and the Bunyala District as a whole through this and other means of our overall Bunyala programs. We will use our successes, which we know will be hard-won, as proven models and inspiration for use regionally, and to inform policies that support sustainable and equitable community development that is resilient both socially and environmentally.

Our potential and capacity:

CJLF is dedicated to the region's and Africa's long-term socioeconomic prosperity and ecological resilience. We intend to accomplish this by leveraging our extensive, high-level African and international network of partners, and we will continue to add partners who are committed to our mission. Our long-term goal is to develop the **Calestous Juma Innovation and Resource Center**, a new organization that will house an accessible, state-of-the-art digital library, resource center, innovation incubator, and convening space for the local community to interact and share learning with a diverse range of experts.

The Foundation is currently being primarily funded by the CJLF Board of Directors and Advisory Committee, who support the organization's operational capacity. We are also grateful for technical and in-kind support from the African Centre for Technology Studies.

We need seed funding for pilot projects serving the Bunyala community in order to implement our grassroots strategy. We have also received financial assistance from the Bunyala community itself. While this sum reflects their financial circumstances, it demonstrates the community's significant commitment to our project.

Team:

The Calestous Juma Legacy Foundation Board of Directors and Advisory Council are made up of Professor Calestous Juma's family, friends, former colleagues, and students. Their bios can be found on our website.

CJLF hired its first part-time Executive Director in 2020, and it also employs a part-time Bunyala Projects Coordinator in Port Victoria, Kenya. Their bios can also be found on our website.

For more information, please visit our website at CalestousJuma.org.

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