



3 E'S 4 AFRICA E.V. 2024 ANNUAL REPORT

FOREWORD OF THE CHAIRPERSON



„We believe in African innovation for global impact.“

Dear readers, dear supporters,

2024 was shaped by global crises, rising climate impacts, and growing pressure on food systems and livelihoods—particularly in Africa. Against this backdrop, the work of 3 E's 4 Africa focused even more clearly on practical, locally driven solutions that translate knowledge into action.

Throughout the year, students, doctoral researchers, and young entrepreneurs implemented projects addressing climate adaptation, sustainable agriculture, and circular resource use. From climate-resilient sorghum research in Ethiopia to methane recycling into biodegradable plastics in Nigeria and fertilizer production linked to green hydrogen in Namibia, these initiatives tackled concrete challenges with scientific rigor and local relevance. In Cameroon, research progressed toward real-world application through recycled materials for road construction.

In parallel, our exchange formats gained momentum. The first edition of the African Students Day provided a space for the African diaspora to reflect critically on responsibility and engagement, while the African Climate Innovation Challenge expanded to francophone Africa, supporting promising start-ups with training, networks, and seed funding.

Internally, we strengthened our organizational foundation through regular meetings and strategic retreats, ensuring that growth remains aligned with our values. The recognition of our work through the “Student of the Year 2024” award underscored the collective effort behind our projects and the trust of our partners.

This report offers a concise overview of how young people across Africa are developing concrete solutions for their communities. Thank you for your continued trust and support.

Sincerely yours,

Contimi Kenfack Mouafo

Chairperson, 3 E's 4 Africa e.V.



DISCLAIMER



We are a non-political association. Our instruments for change are the promotion of education, sustainability, self-determination, and progress in Africa. We are not an association that focuses on anti-racism education in general, or in Germany in particular.

However, as an association of the African diaspora—though not exclusively, but above all because of our strong African identity—we are always anti-racist. That is beyond any doubt.

We are an association that values plurality and diversity; for that reason, our members do not turn a blind eye to the issue of racism. On the contrary, many of us have already had numerous, often painful, experiences with this structural ill. We therefore engage with it actively—both the BIPOC (Black, Indigenous, People of Color) members and our white members.

In addition, we have an Anti-Racism Officer within the association, Wilfriede Ayodele, who is also a co-founder of the Autonomous BIPOC Office at the University of Cologne.

As soon as we notice that we are confronted with clearly identifiable postcolonial thinking or strong racist prejudices, we reserve the right to discontinue communication and any potential cooperation.

We are convinced that this will not be necessary and already look forward to getting to know you.

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OUR APPROACH



EDUCATION

EMPOWERMENT



ECOFRIENDLINESS



VISION

African innovation for global impact. We believe in a world in which the innovative ideas of young Africans are visible, valued, and strategically supported. In this way, their solutions can effectively address both local and global challenges of the climate crisis. Our vision is brought to life in our image film: *Perspectives – African Changemakers*.

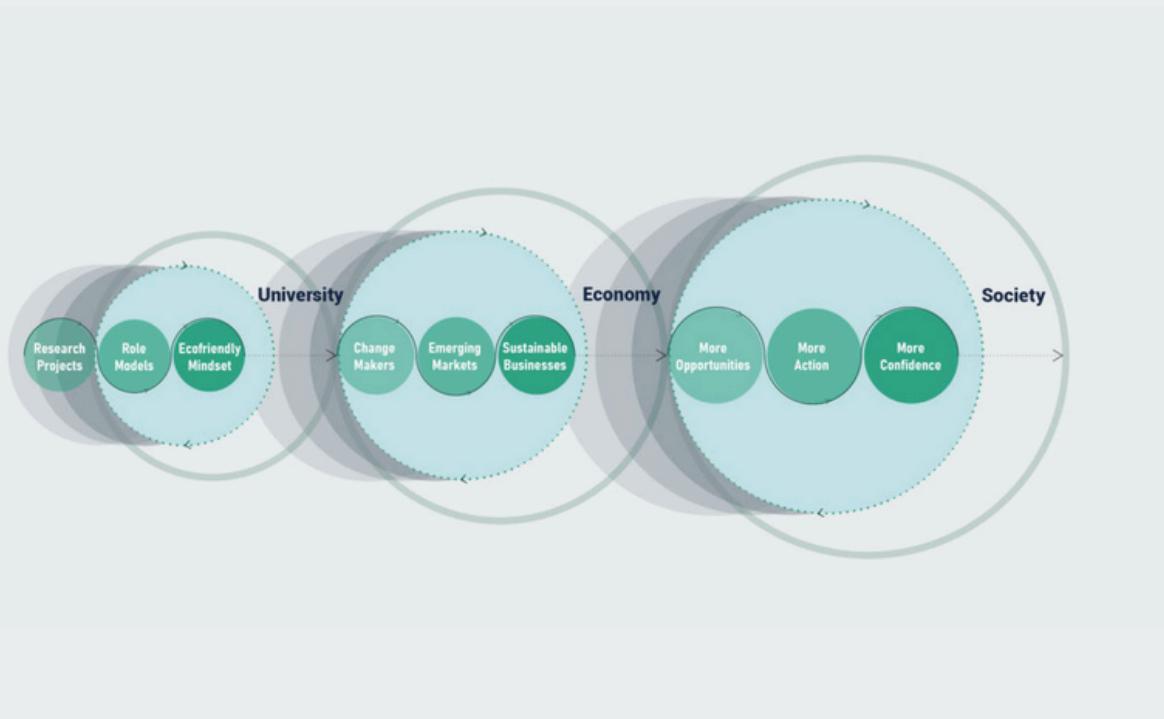
https://youtu.be/1C5OC0w_NF0

IMPACT

To communicate the impact of our initiative more clearly, we developed the 3E4A Impact Cycles. The overall system of these three cycles—each oriented toward higher education, business, and society—serves both as a manifestation of our vision and as a source of motivation and guidance.

It is a self-reinforcing system. The initial impetus must come from the African students and doctoral candidates themselves. Our role is to make their work tangibly easier.





UNIVERSITY LEVEL

The impact begins with African students and doctoral candidates at universities in Africa. Through our support, they are able to translate their ideas into practice. As all projects have a clear focus on climate change adaptation or mitigation, this simultaneously strengthens an eco-friendly mindset. Through their projects, we place the students and doctoral candidates in the spotlight.

ECONOMIC LEVEL

As role models who bring innovative ideas to life, students and doctoral candidates in Africa become changemakers. They move from the academic sphere into the economic sector—either as employees or as social entrepreneurs with their own solutions. In doing so, they carry the ecological focus of their research directly into the economy.

SOCIETAL LEVEL

At this level, new perspectives emerge. Students and doctoral candidates in Africa inspire the African youth to take action. By founding start-ups with sustainable business models, they create new jobs and opportunities for development. Young people come to realize that economics and ecology can be considered together. The result is engaged and empowered societies that address challenges proactively, implement innovative ideas, and protect nature as a central foundation of life.

THE 3 E'S EXPLANATION



EDUCATION

E



Only **3.8%*** of global funding for climate change research is allocated to topics that specifically or substantially concern Africa. Given the scale and intensity of climate-related impacts on the continent, as well as the associated risks, Africa would deserve a central place in global climate research.



With our approach, we aim to ensure that **innovation in the African context** is deliberately promoted through education and research. For this reason, we work primarily with students and doctoral candidates at African universities.

*Overland et al. (2022) Funding flows for climate change research on Africa: where do they come from and where do they go? Climate and Development, 14:8, 705-724, DOI: 10.1080/17565529.2021.1976609





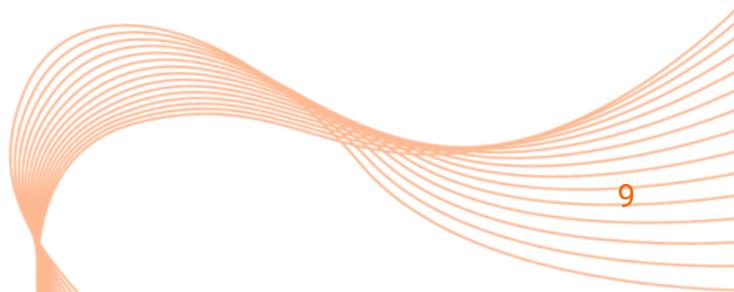
EMPOWERMENT



To this day, a **predominantly negative image and narrative** of the African continent remains widespread. This narrative reinforces feelings of hopelessness and a lack of future prospects among young people on the ground.



We seek to counter this by conveying to African youth that they can—and should—develop the solutions to their own challenges. They understand local problems best and should therefore be the ones to design appropriate solutions. We provide them with the means to implement their ideas while presenting them as changemakers. By making their work visible, we promote an **authentic and innovative image of the continent**.





E

ECOFRIENDLINESS



Problem

Africa is the continent most vulnerable to climate change. An estimated **43 million people*** in Africa will be pushed further below the poverty line by 2030 if climate change is not effectively addressed. This places considerable strain on the continent's development.



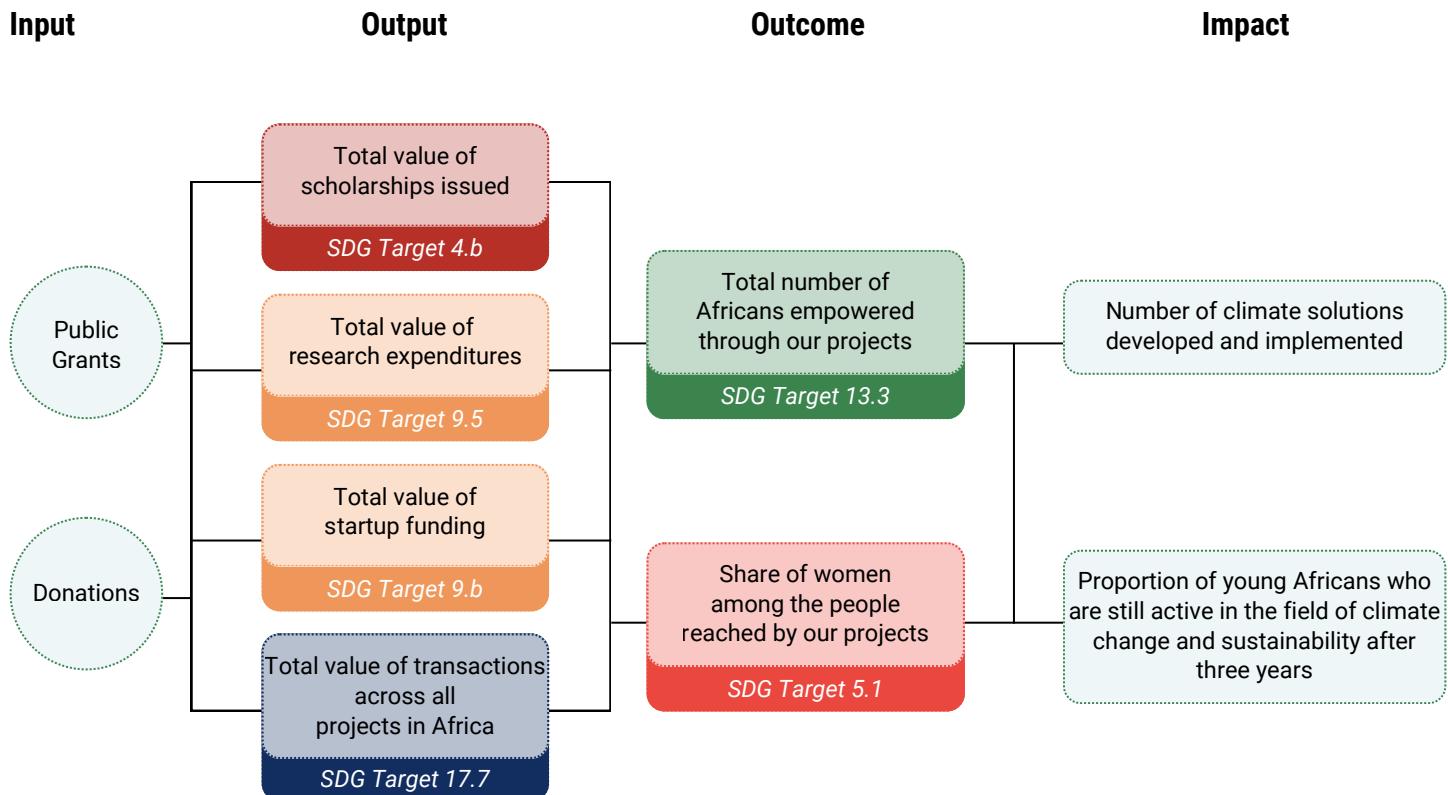
Solution

To actively counter climate change and its consequences, the projects we support focus on developing **new concepts and solutions for climate change adaptation and mitigation.**

*World Bank Group (2020) Africa Climate Business Plan 2020-2026
<https://www.worldbank.org/en/programs/africa-climate-business-plan>



OBJECTIVES AND IMPACT MEASUREMENT



Our impact measurement is based on a selection of the United Nations' 17 global Sustainable Development Goals, as well as indicators derived from them.



SDG **Indicator** **Value**
2020/07/01 - 2024/12/31

	Total value of scholarships issued (<i>Target 4.b</i>)	22,780 €
	Share of women among the people reached by our projects (<i>Target 5.1</i>)	40 %
	Total value of research expenditures (<i>Target 9.5</i>)	46,006 €
	Total value of startup funding (<i>Target 9.b</i>)	41,058 €
	Total number of Africans empowered through our projects [1] (<i>Target 13.3</i>)	288
	Total value of transactions across all projects in Africa (<i>Target 17.7</i>)	121,382 €

[1] Number of Africans who are directly and positively impacted by our work. This includes participants in research projects, attendees of educational events, and individuals who have received mentoring or financial support as part of an ideas competition. The respective number of participants is recorded for this indicator upon completion of each project.



FULL TEXT OF THE 17 GLOBAL SUSTAINABLE DEVELOPMENT GOALS OF THE UNITED NATIONS

Link SDG metadata repository: <https://unstats.un.org/sdgs/metadata/>

SUSTAINABLE DEVELOPMENT GOALS



Target 4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries

Target 5.1 End all forms of discrimination against all women and girls everywhere

Target 9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending

Target 9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities

Target 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

Target 17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed

OUR PROJECTS



HOW DO OUR PROJECTS WORK?

- 01** Students and/or doctoral candidates from African universities contact us with their project ideas.
- 02** We assess the concept in terms of sustainability and evaluate the team with regard to its motivation. We then seek funding from foundations, companies, and private individuals.
- 03** Once the necessary financial resources have been secured, the project is launched. The participants and their supervisor carry out the project independently.
- 04** After each quarter, we jointly evaluate the project's progress with all stakeholders, discuss any potential issues, and decide on the release of the next quarterly payment.
- 05** After the project period has ended (with twelve months as the target duration), the students submit a scientific documentation of the project to us, which may be published. We evaluate the project as a whole. If the project results give rise to further promising research opportunities or potential business ventures, we enter into a renewed collaboration with the students.





COMPLETED PROJECT

CMR-004

Local Minerals as Fertilizer

A team of four Cameroonian students took on the challenge of reducing the use of chemical fertilizers and replacing them with sustainable applications. To this end, the students examined the potential of local geological materials in four villages in northern Cameroon. On this basis, they developed a method to restore soil fertility. The aim is to improve food availability while simultaneously reducing reliance on chemical fertilizers, which are costly, degrade soil quality, and contribute to climate change.

FACTS

Country	Cameroon
Duration	April 2023 – April 2024
University	Université de Ngaoundéré
Partner	FOOTPRINT
Students	4 (including 1 woman)
Supervisor	Prof. Jean Pierre Nguetnkam
Budget	€11,000
Funder	Innovation Zukunft Stiftung

IMPLEMENTATION

The project was carried out as part of the master's theses of the four team members and built on their preliminary studies. In the course of the work, the morphological and chemical properties of soils in the regions of Gambaoura, Lara, Tchatibali, and Dibi in northern Cameroon were examined.



For this purpose, numerous soil profiles were established on agricultural land in the region, the different soil horizons were described, and samples were collected. The samples were then analyzed in the laboratory for their chemical composition and morphological characteristics.

In addition, the fertilization potential of granites, Vertisols, and pyroclastics on these soils was investigated. These are rock types that are common in the region and readily accessible. The various rocks were collected and manually crushed into a fine powder. Experimental plots were then established in the four regions and amended with the rock powders at concentrations of 10%, 20%, and 30%. On this basis, fertilization trials were conducted with incubation periods of one, two, and three months.

The fertilization potential of the geological materials was assessed based on changes in chemical soil parameters. The results showed that the addition of rock powders sustainably improved soil properties, particularly base content, pH value, and calcium, magnesium, and potassium levels. The best results were achieved using granites with an enrichment rate of 30%.





IMPACT

The team collected extensive data on soil composition in northern Cameroon, which are of high value both for further research and for practical, action-oriented recommendations for farmers. In addition, it developed a new method for enriching and mineralizing soils using locally available rocks. In this way, soil fertility and yields can be sustainably increased. In a region affected by food scarcity, this approach is of particular significance.

At the same time, the method represents an environmentally compatible alternative to chemical fertilizers, which place a substantial financial burden on farmers. By disseminating the method through workshops for local farmers, the knowledge gained was effectively communicated and translated into practice.

The team invested a significant amount of effort and demonstrated that it is possible to develop local and sustainable solutions to global challenges with limited resources. By successfully completing their master's theses within the framework of the project, all four members not only gained valuable professional and personal experience, but also laid the foundation to continue their careers with a clear focus on solutions for people and the environment.





COMPLETED PROJECT

GHA-002

Smart Biogas Technology

The project aimed to integrate Internet of Things (IoT) technology and sensor systems into local biogas plants for smallholder farmers in Ghana. The team developed a prototype that provides users with real-time data on key operational parameters and issues recommendations for action when deviations from optimal conditions occur. The results demonstrate strong potential for expanding biogas use in Ghana, thereby reducing greenhouse gas emissions as well as deforestation and associated respiratory diseases.

FACTS

Country	Ghana
Duration	April 2023 – April 2024
University	Kwame Nkrumah University of Science and Technology
Partner	GAYO
Students	6 (including 3 women)
Supervisor	Dr. Richard Opoku
Mentor	Frank Adjei-Kyeremeh
Budget	€10,000
Funders	Leopold Bachmann Stiftung, Cordes & Graefe Stiftung

IMPLEMENTATION

The team began the project with research into the operation of biogas plants and existing solutions for improving efficiency. They then conducted interviews with installers, experts, and operators of small-scale biogas plants in the Ashanti Region. This enabled them to gather key information and accurately identify the needs of the target group.



In the next step, development of the prototype began. For this purpose, electrical engineering components such as sensors, communication modules, and data acquisition systems were procured. As the core component of the IoT device, the team developed a custom printed circuit board that connects the sensors. Building on this, the components were integrated and initial functional tests were conducted. In addition, the team designed a custom-fit enclosure produced using 3D printing, enabling seamless integration of the components.

In parallel, other team members worked on data processing and visualization. A commercial platform was used for data processing, to which the sensor data are transmitted via custom-developed Arduino code. For visualization, a user interface was developed as a central component of the app, presenting the data in an intuitive manner. The app also provides additional content such as training materials, manuals, and maintenance guidelines.



The first prototype was subsequently tested at a smallholder farmer's biogas plant. During testing, air pressure, methane gas concentration, temperature, and humidity were reliably measured over extended periods. A key finding was the limited battery life of only a few hours; therefore, a solar panel is planned to ensure continuous operation in the future.





IMPACT

The project objective—the development of the device including a feasibility study—was achieved, and the product was successfully tested as fully functional. The preparation of a scientific final report comprehensively documented the project results and presented the approach and methodology in a transparent and traceable manner. This provides a robust foundation for continuing the work. Through the detailed elaboration of the concept, the students gained hands-on experience and acquired solid technical expertise.

Of particular value were the visibility and experiences the team gained during the second half of the project through participation in several conferences and competitions. This motivated some team members to pursue the idea further and confirmed the relevance of their work. The team now has the necessary prerequisites to further develop the initiative and, in the long term, spin it off in order to achieve a sustainable positive impact on the environment and the local population.





COMPLETED PROJECT

NAM-002

Green Ammonia in Fertilizers

The five students of chemistry and chemical engineering pursued the goal of promoting the use of sustainable fertilizers in Namibia while simultaneously identifying application fields for the country's green hydrogen. This approach is intended not only to benefit farmers, who often rely on expensive synthetic or unsuitable natural fertilizers, but also to create new use cases for green hydrogen, which is expected to be produced on a large scale in Namibia in the future.

FACTS

Country	Namibia
Duration	May 2023 – May 2024
University	University of Namibia
Partner	NANSO
Students	5 (including 1 woman)
Supervisors	Dr. Natangue Shafudah, Dr. Petrus Ausiku, Prof. Efigenia Semente
Budget	€10,000
Funder	GIP AG

IMPLEMENTATION

The primary objective of the laboratory work was to extract ammonia from slurry and use it to produce "renewable ammonium sulfate fertilizer." Animal slurry is rich in ammonia and is commonly used as a fertilizer due to its nitrogen-enhancing effect. However, a significant portion of the nitrogen escapes into the atmosphere and is therefore not efficiently available to plants. Against this background, the team identified substantial potential for agriculture in the targeted extraction of ammonia and its conversion into ammonium sulfate. Through collaboration with the Namibian Green Hydrogen Research Institute, the team had access to green hydrogen, which was used in the process.



Despite the process engineering challenges, the team succeeded in producing ammonium sulfate with satisfactory chemical properties. To evaluate the effectiveness of the fertilizer produced, tomato and potato plants were cultivated and supplied with the renewable ammonium sulfate fertilizer, compost-based fertilizers derived from organic materials, and commercially available fertilizers. The results showed that the synthetically produced fertilizers achieved higher yields than the compost fertilizers. The renewable ammonium sulfate fertilizer achieved yields comparable to those of commercial products.

In addition, the team conducted a survey on the use of sustainable fertilizers and, together with the experimental results, integrated the findings into a policy advisory document. For this purpose, 30 farmers were surveyed. The evaluation showed that many respondents are insufficiently informed about the negative impacts of conventional fertilizers and the potential of sustainable alternatives, yet demonstrate strong interest in further information. High fertilizer costs and low yields when fertilizers are not used were also identified as key challenges.





The resulting recommendations were communicated to government authorities in a workshop and are as follows:

- Conventional ammonia fertilizer should be produced using green hydrogen available within the country in order to reduce the carbon footprint.
- In rural regions, comprehensive education campaigns should be implemented on the use, benefits, and proper application of sustainable (ammonia-based) fertilizers.
- Compensation and support mechanisms should be introduced to facilitate farmers' transition from conventional synthetic fertilizers to sustainable alternatives.

IMPACT

The ammonia produced within the framework of this project is sustainable not only due to the resource-efficient use of cattle manure, but also because green hydrogen is employed in the synthesis process. This is of particular importance for Namibia, as the country is investing heavily in the solar-based production of green hydrogen. Combined with the team's recommendation to use green hydrogen in conventional fertilizer production processes as well, these approaches offer substantial potential to reduce climate-damaging emissions and lower fertilizer costs in Namibia.



Following the study, the team also conducted an education campaign for the surveyed farmers, informing them about the use of sustainable fertilizers. The presentation of the results to government representatives was likewise successful. The recommendations were taken up, and €70,000 was allocated for further research into green ammonia fertilizer. This funding enables the project results to be further developed and, in the long term, transferred into practical implementation.





COMPLETED PROJECT

ACIC-2024

African Climate Innovation Challenge 2024

ACIC is an ideas competition that challenges young entrepreneurs to develop innovative and environmentally friendly ideas. It helps them translate these ideas into concrete solutions. This is achieved by equipping them with the necessary entrepreneurial skills and providing start-up capital to implement their solutions and support African communities in adapting to climate change.

FACTS

Applications	Entire Africa (English- and French-speaking)
Pitch	Accra, Ghana
Duration	October 2024 – December 2024
Curriculum	1 week, 6 lectures, 6 experts
Partner	GAYO, Start.Up Lounge
Participants	66 (including 26 women) in 20 teams
Budget	USD 32,000 (fully funded by partners)
Prize money	USD 20,000 (10,000; 10,000)

IMPLEMENTATION

In the third edition of ACIC, applications were opened for the first time to francophone countries in Africa. In the previous year, only English-speaking countries had been eligible. This resulted in a total of 824 applications from 42 countries and highlighted the considerable potential of young people who are committed to their communities and eager to actively contribute to climate action. The selection process was therefore highly competitive. Ultimately, seven francophone and 13 anglophone teams were selected. Priority was given to teams or start-ups that had already taken initial steps toward company formation, as the program is particularly effective for this target group.



This year, the curriculum was shorter, but it was designed to be bilingual and covered the following topics:

- Climate change adaptation and sustainability
- Empowerment and social relevance
- Soft skills, digital tools, and leadership
- Product and business development

From these teams, six finalists were subsequently selected and traveled to Accra in December to present their ideas to an expert jury at a pitch event. The finalists were:

- **Farmer Lifeline (Winner):** Uses solar-powered technologies for real-time pest detection as well as advisory services and seed recommendations. The goal is to support smallholder farmers in mitigating the impacts of climate change and minimizing crop losses.
- **Green Tech Africa (Winner):** Processes invasive water hyacinths into environmentally friendly absorbent materials and construction products that can, among other uses, be applied to absorb oil pollution on water surfaces.





- **Ecores Agro Industries:** Produces biodegradable textile fibers from pineapple waste, reduces environmental pollution, and promotes the use of sustainable materials.
- **Sagrisalma Company:** Produces organic fertilizers from human fecal sludge and agricultural waste to improve soil health and reduce the use of chemical fertilizers.
- **Riwe:** Offers affordable, automated, and paperless insurance products that protect farmers against climate-related risks.
- **Bioplanet TMC:** Restores degraded soils using organic fertilizers, increases agricultural yields, and counteracts soil degradation.

IMPACT

The finalists presented their innovative solutions to pressing climate challenges and received valuable feedback from the jury. Subsequently, two outstanding teams were awarded USD 10,000 each to support the scaling of their businesses and enhance their impact in the fight against climate change.





The winner among the francophone teams is Green Tech Africa from the Republic of the Congo. The team plans to invest 20% of the prize money in further developing its plant monitoring devices. The largest share of the funds will be allocated to manufacturing the robots, which are expected to reach up to 870 farmers and approximately 2,450 hectares of farmland. The remaining 15% is earmarked for filing a patent for the innovative product.

The winner among the anglophone teams is Farmer Lifeline from Kenya. The start-up intends to use 40% of the funds to expand production capacity for processing water hyacinths. A further 20% will be invested in marketing activities to increase the reach of the solution. The remaining 40% is reserved for further product development, in particular to improve absorption and construction properties.

The winners' plans illustrate the tangible outcomes of ACIC. The awarded start-ups now have the necessary resources to scale their projects and address key climate and environmental challenges. The program's continued focus on innovation, collaboration, and capacity building positions ACIC as an important driving force on Africa's path toward greater climate resilience. Ongoing exchange with the participating teams, especially the winners, will be maintained to support their development and evaluate the program's impact.





COMPLETED PROJECT

ASD-2024

African Students Day 2024

African Students Day is a platform for young people from the African diaspora who want to take responsibility and actively contribute to the development of their continent of origin. The focus is on exchange, critical reflection, and practice-oriented impulses for civic engagement. The event brings together personal experiences and professional expertise and promotes concrete approaches to action. Its aim is to make the role of the diaspora as a driving force in development cooperation visible and to strengthen it.

FACTS

Location	Aachen, Germany
Time	May 2024 (one-day event)
Speakers	9 (1 moderator, 1 keynote speaker, 8 panelists)
Partner	AfroPlus, RWTH Aachen
Participants	120+ people from the African diaspora
Budget	€7,500

IMPLEMENTATION

The event opened with a welcome address by the moderator, Liz Shoo (WDR, Deutsche Welle), followed by a keynote speech by Prof. Dr. Gael Pentang. In her address, she emphasized the responsibility of the African diaspora in Europe to engage actively and without delay in development cooperation and to deliberately contribute their cultural knowledge. The first panel discussion, featuring four experts from academia and NGOs, focused on the mobility of African students and the structural challenges of the African education system. Dominant narratives portraying studying and living in Europe or North America as inherently desirable were critically examined. Together with the audience, necessary reforms at African universities were discussed in order to better retain highly qualified academics on the continent.



In the second panel discussion, four young activists shared insights from their own practical work. As African students in Europe, they had founded organizations to initiate tangible change in their countries of origin. The panel provided space for exchanging experiences and aimed to encourage further participants to develop their own initiatives.

An African buffet concluded the event and created an informal setting for networking and in-depth conversations. At the same time, WDR provided journalistic coverage of the event and produced a [television report](#).



IMPACT

African Students Day was met with strong interest and was perceived by participants as both relevant in content and action-oriented. Many stated that, for the first time, they felt concretely empowered to initiate or expand their own engagement for their home continent. The event strengthened networking within the African diaspora and fostered a shared self-understanding as active actors in development cooperation. The positive feedback provides a solid foundation for continuing the format in the coming years.





ONGOING PROJECT

ETH-001

Development of multi-stress-resistant Sorghum Plants

Using mutation breeding, the research team aims to develop new sorghum genotypes that are resilient to climatic stress factors while achieving higher yields. By improving the adaptability and productivity of sorghum under the challenging conditions in Ethiopia, the project seeks to contribute to food security, agricultural sustainability, and climate change adaptation in the country.

Funding	€12,000	(100 %)
Disbursements	€8,922	(74 %)
Progress	Q3/Q4	(75 %)

FACTS

Country	Ethiopia
Duration	June 2024 – June 2025
University	Addis Ababa University, Institute of Technology
Partner	TaYA (formerly Talent Youth Association)
PhD students	4 (including 2 women)
Supervisor	Dr. Tileye Feyissa
Budget	€12,000
Funders	Cordes & Graefe Stiftung, Innovation Zukunft Stiftung

PROJECT BRIEF

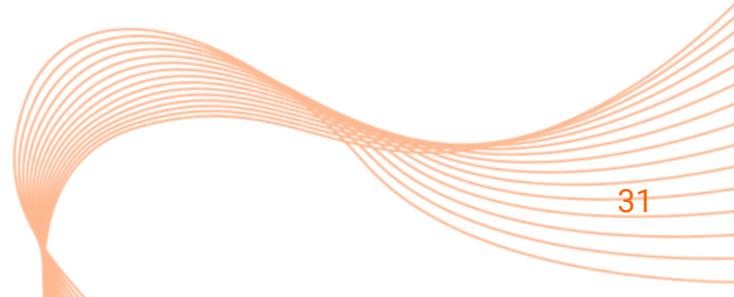
Sorghum is a key staple crop for food security in Ethiopia. However, its production is often constrained by environmental factors such as drought, high temperatures, parasitic weeds such as *Striga*, and soil acidity. Mutation breeding offers an effective approach to developing more resilient and higher-yielding genotypes.



Prior to the project, the team bred seed material representing 200 different genotypes. In the first quarter, this seed was sown at three sites. In the second quarter, the team monitored and measured the field trials to assess the growth of the various sorghum genotypes. Key data were collected and initial insights gained. The focus of the third and fourth quarters is on yield evaluation and the final analysis of the field trials in correlation with the seed material used, in order to identify the highest-performing lines.

The sub-objectives of this research project are:

- To significantly reduce the risk of crop failures in Ethiopia and thereby strengthen agricultural productivity and food security.
- To promote more sustainable cultivation practices through the increased resilience of new sorghum genotypes, as farmers become less dependent on chemical pesticides and the water requirements of the crops are reduced.
- To make cultivation more efficient and manageable for farmers, thereby improving the cost efficiency of food production in Ethiopia.
- To enable the team to conduct research on globally relevant issues while simultaneously developing concrete solutions to local challenges.





ONGOING PROJECT

NGA-001

Biotransformation of Flare and Landfill Gas to Green Plastic

The project team aims to produce compostable plastic from recycled methane. In this way, harmful emissions are to be converted into a valuable product that can be used, for example, for food packaging while simultaneously helping to reduce environmental pollution. In the long term, the project is intended to be developed into a start-up.

Funding	€12,000	(100 %)
Disbursements	€6,945	(58 %)
Progress	Q3/Q4	(75 %)

FACTS

Country	Nigeria
Duration	June 2024 – June 2025
University	University of Nigeria Nsukka
Partner	Stand Out For Environment Restoration Initiative
Students	6 (including 3 women)
Supervisor	Dr. Chioma Onyetugo Amadi
Budget	€12,000
Funders	Cordes & Graefe Stiftung, Innovation Zukunft Stiftung

PROJECT BRIEF

Although gas flaring has been legally prohibited in Nigeria since 1984, the country still ranks among the ten nations with the highest flaring rates worldwide. This has significant negative impacts on the environment and public health.



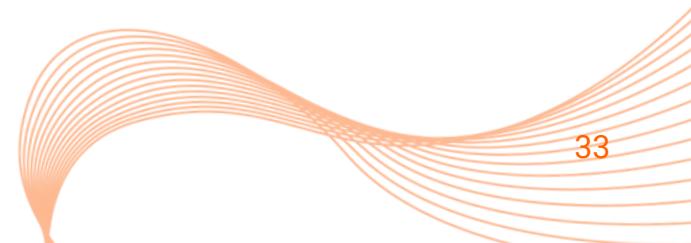
The project team aims to process this flare gas together with methane from food waste into polyhydroxybutyrate (PHB). PHB is a biodegradable polymer synthesized through bacterial fermentation processes. Specifically, bacteria metabolize methane and, in doing so, produce PHB, a versatile material.



A comprehensive literature review preceded the start of the project. In the first quarter, the team visited gas flaring sites and landfill facilities together with local experts and prepared the laboratory work. In the second quarter, the team began initial experiments on PHB production while working in parallel to secure access to gas sources from flaring sites and landfills.

The sub-objectives of this research project are:

- To avoid climate warming caused by methane—a gas with a greenhouse effect approximately 21 times greater than that of CO₂—by recycling methane that would otherwise be released into the atmosphere, while simultaneously reducing the use of fossil methane.
- To produce a valuable product in the form of PHB as a bioplastic, whose use contributes to reducing environmental pollution due to its biodegradability.
- To replace conventional polymers such as PP and PE with PHB in order to reduce the production of petroleum-based plastics and conserve resources.
- To pursue the establishment of a start-up to enable the long-term and scalable utilization of the project results.



FINANCIAL REPORT

2024



Inflow (grants, donations, membership fees)	€51,674
Expenses (association costs, events, visibility)	– €2,943
Expenses (projects)	– €29,437
Annual delta	€19,294
Opening account balance (as of 01/01/2024)	€24,570
Closing account balance (as of 31/12/2024)	€43,864

Figures may vary slightly due to rounding

Because sustainability is also important to us in the financial sector, we have chosen to hold an account with GLS Gemeinschaftsbank eG, 44774 Bochum. Among other things, customer deposits there are used to finance projects in the field of renewable energy. This explicitly does not constitute advertising; it is intended solely to provide information to you as a potential donor and to ensure the greatest possible transparency.

As a registered non-profit association, 3 E's 4 Africa e. V. is exempt from corporate income tax and trade tax in accordance with Section 5 (1) No. 9 of the German Corporate Income Tax Act (KStG) and Section 3 No. 6 of the German Trade Tax Act (GewStG). The tax exemption is granted under tax number 201/5908/4540.

NEW PARTNERSHIPS



National Commission on Research Science & Technology (NCRST) - Namibia

NCRST is a governmental institution that promotes and coordinates research, science, technology, and innovation in Namibia in order to strengthen the country's competitiveness and socio-economic standard of living. In the future, NCRST will become a key partner for projects in Namibia and will take an active role in their implementation. A concept for a three-year series of research projects for students in Namibia is currently being developed.

Talent Youth Association (TaYA) - Äthiopien



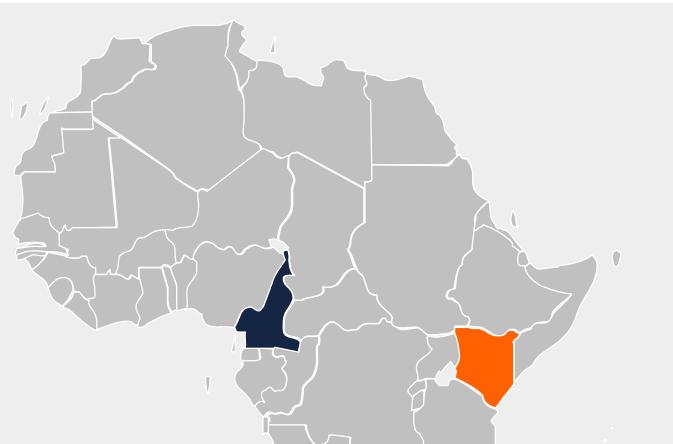
TaYA is a non-profit organization that has been working since 2003 to improve the health and well-being of adolescents and young people in Ethiopia. Its objective is to reduce development barriers, empower young people, and promote their active participation in social and national development. The organization focuses on youth participation, sexual and reproductive health and rights, and economic empowerment. Within the project in Ethiopia, TaYA serves as the local partner.

Stand out for Environmental Restoration (SOFER) - Nigeria



SOFER is a non-profit initiative dedicated to promoting environmental awareness and protecting the planet. Since 2010, it has worked with more than 400 volunteers across several Nigerian states on creative programs aimed at waste reduction, reuse, biodiversity promotion, and raising environmental awareness among young people. Within the research project in Nigeria, SOFER supports the students as a local partner.

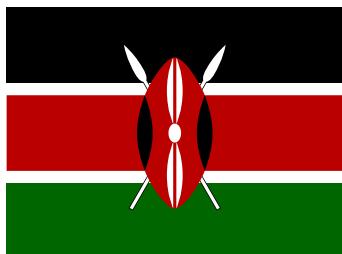
OUTLOOK



CMR-005

NEW STREETS FROM OLD TIRES IN CAMEROON (PART 2)

A group of students from Cameroon is developing a new type of asphalt that uses waste tires and plastic waste for road construction. Following an initial project phase focused on analyzing mechanical properties, the next step is practical implementation, including the construction of a road section and a life cycle assessment. The objective is to reduce plastic pollution and waste incineration, strengthen recycling and the circular economy, lower construction costs, and thereby improve road infrastructure and promote sustainable development in Cameroon.



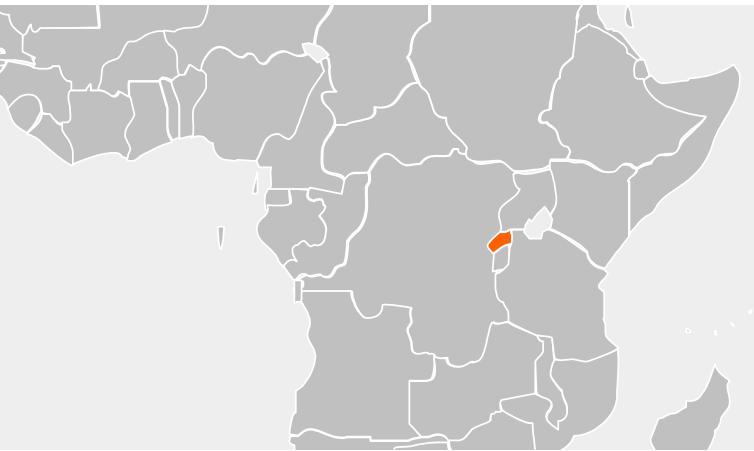
KEN-001

EVALUATION OF FLOOD MANAGEMENT IN FLOOD PRONE AREAS IN KENYA

The community of Budalangi in western Kenya is regularly affected by flooding due to its proximity to Lake Victoria and the Nzoia River, resulting in crop losses, destruction, and displacement. A team of five students is investigating the causes and impacts of the floods as well as the effectiveness of existing flood protection measures. The aim is to develop an integrated flood management approach that combines indigenous knowledge with modern insights. The results will be published and discussed in workshops with policymakers to strengthen regional resilience and promote local ownership of climate adaptation efforts.



OUTLOOK



ASD-2025 **AFRICAN STUDENTS DAY 2025**

The African diaspora comprises more than 200 million people and holds significant potential for Africa's development. ASD strengthens a sense of responsibility and demonstrates how civic engagement can build bridges between Europe and Africa. The focus is on development cooperation, Africa's international image, educational migration, as well as research and innovation. Following the successful premiere in 2024 with 120 participants at RWTH Aachen University, ASD 2025 is planned to take place at Hochschule Niederrhein in Krefeld.



ACIC-2025 **AFRICAN CLIMATE INNOVATION CHALLENGE 2025**

The ideas competition will be continued to support young African entrepreneurs in implementing sustainable innovations through training and start-up capital. The main partners will remain GAYO and Start.Up Lounge. The pitch event is planned to take place in Rwanda (visa-free entry for finalists). Applications from both francophone and anglophone countries are envisaged, and the curriculum will be offered bilingually. The objective is to promote market-ready solutions to climate and environmental challenges in Africa.

ASSOCIATION AND EVENTS



In the fourth year of our existence, we look back on significant projects made possible by the association's stability and the voluntary commitment of our members. As in previous years, this cohesion was further strengthened through regular meetings.

STUDENT OF THE YEAR 2024

Our founder, Contimi Kenfack Mouafo, was awarded the "Student of the Year 2024" prize by the German Association of Universities (Deutscher Hochschulverband) and the German Student Services Organization (Deutsches Studierendenwerk). He is the first African to receive this distinction and was recognized in particular for his outstanding voluntary commitment to students in Africa. The award was presented to him on March 25 during the "Gala of German Science" in Berlin by ZDF news anchor Gundula Gause.

In the presence of team members as well as numerous professors, researchers, and other figures from the academic community, Contimi accepted the award. On the occasion of the honor, WDR produced a video feature about him, our team, and our work, which was broadcast on "WDR Lokalzeit aus Aachen." In addition, the German Association of Universities produced another video about our work as part of the award ceremony.



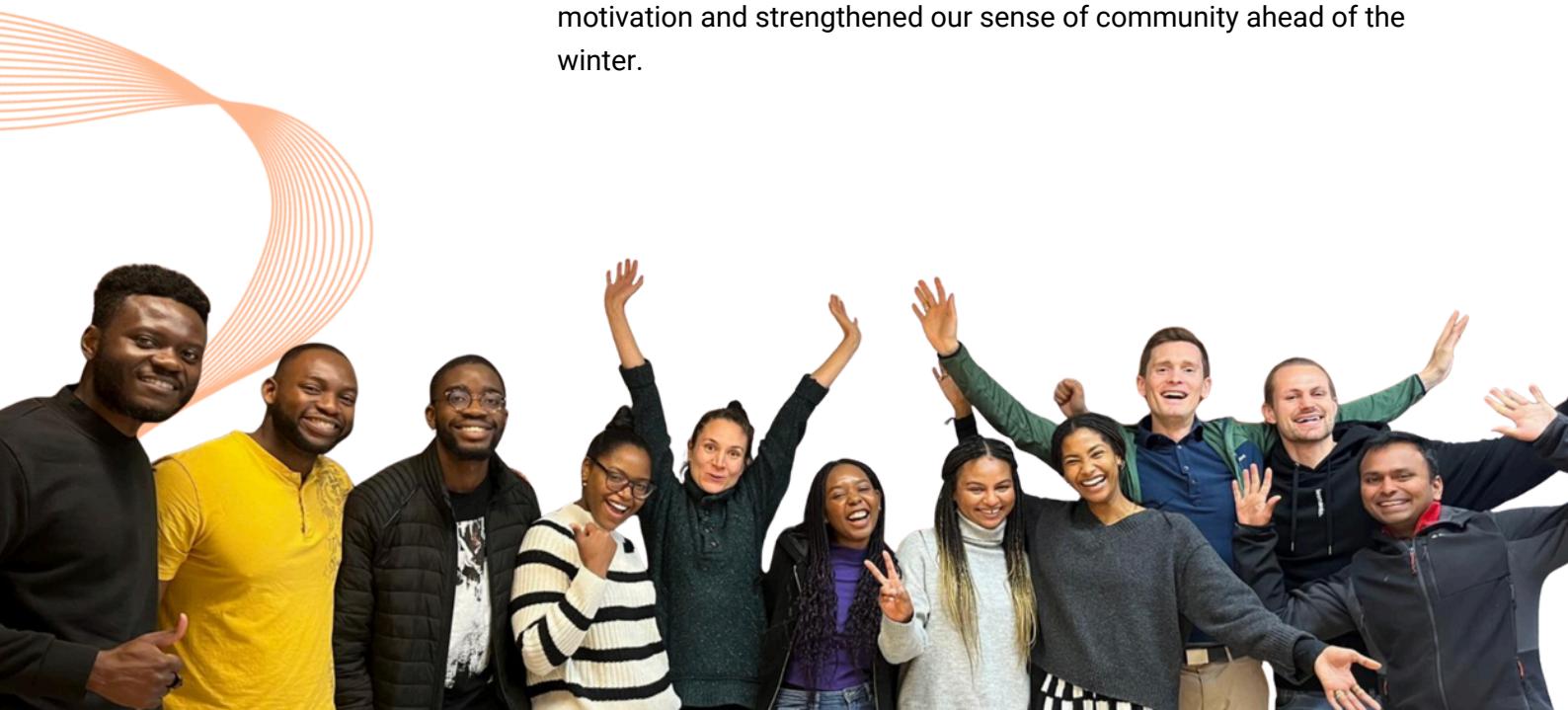


GENERAL ASSEMBLY AT THE NORTH SEA

For this year's general assembly, we traveled to the North Sea for a weekend in May. In addition to reviewing our activities and electing the new executive board, we discussed upcoming projects. All members were invited to share their vision for our work, allowing us to jointly assess whether the association's direction continues to align with these perspectives. Alongside the formal agenda, there was ample time for rest, beach visits, and the preparation of shared, high-quality meals. Meetings like these strengthen our cohesion and foster a lasting sense of community.

ASSOCIATION MEETING IN AACHEN

In October, we held a second gathering in Aachen. The day began with a work session in which we compared our ongoing projects in terms of workload and impact in Africa and critically reviewed our processes. The objective was to identify patterns in team collaboration in order to make project selection and coordination more efficient and effective. This was followed by a physical break with beach volleyball and climbing. The day concluded with a shared dinner. The meeting provided renewed motivation and strengthened our sense of community ahead of the winter.



THANK YOU!



Without you—our current and future supporters—and without you—our current and future members and 3E4A ambassadors—Contimi's original idea would still be nothing more than a concept. Our changemakers, especially the students in Africa, would have had one important opportunity fewer to put their knowledge into practice through sustainable, applied research projects and to lead by example.

For this, we would like to express our sincere thanks. This shared journey has been, and continues to be, deeply enriching and inspiring for us. We very much hope to have you by our side in the future as well.

The 3E4A Team





3 E's 4 Africa e.V. is a registered non-profit association based in Aachen. Purpose of the association according to its statutes:

- The promotion of education, popular and vocational education, including student support (cf. German Fiscal Code (AO) § 52 para. 2 no. 7)
- The promotion of development cooperation (cf. AO § 52 para. 2 no. 15)
- To increase the degree of autonomy of Africans, in particular young people in an academic environment, and to empower them to find solutions to social and ecological problems

As a registered non-profit association, 3 E's 4 Africa e. V. is exempt from corporate income tax pursuant to § 5 para. 1 no. 9 KStG and provisionally exempt from trade tax pursuant to § 3 no. 6 GewStG under tax number 201/5908/4540, as determined by the Aachen tax office.

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AFRICAN INNOVATION FOR A GLOBAL IMPACT



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