

# Education Research in African Contexts

Traditions and New Beginnings  
for Knowledge and Impact

Edited by  
Paul Webb, Mathabo Khau and  
Proscovia Namubiru Ssentamu



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4 Eccleston Place, Somerset West, 7130, Cape Town, South Africa  
info@africanminds.org.za | www.africanminds.org.za

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# CHAPTER 5

## University-community engagement opportunities to address climate change issues in an African context. The case of Makerere University, Uganda

*Nelson Mandela, David Ssekamatte, Benjamin Kyalo Wambua*

### Introduction and background

University-community partnerships have the potential to respond to society's most pressing needs through engaged scholarship (Pundt & Heilmann, 2020). Because of their independent and science-driven perspective, universities can mediate between different actors such as NGOs and community members. Collaborative approaches in which a university not only coordinates, but mediates, third mission activities by reaching out to local communities, organizations, enterprises, underpinned by an *Ubuntu* philosophy of interdependence and reciprocity within an African society, can contribute to addressing societal, environmental and political issues as long as institutions of higher education see themselves as co-belonging to a community of humans on the basis that there is no precondition for belonging (Waghid, 2020).

Despite a plethora of third mission (community service) potentials, universities continue to be mistakenly viewed as 'ivory towers' that are isolated entities and are elitist in nature and disconnected from the places in which they are situated. Treating research and teaching and community service as separate entities from communities and societal problems may account for the gap between teaching, research, and community engagement.

Universities are particularly well-positioned to solve problems related to climate change by virtue of being generators of knowledge. This is core for transdisciplinary research where higher institutions of learning engage stakeholders in significant ways throughout the research process, rather than collecting data, informing stakeholders or valorizing knowledge afterwards. For instance, such synergies between universities and communities can raise awareness about issues of public concern like climate change mitigation and adaptation and working more systematically to create positive change.

Among the targets is improving education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning in an African context. This is because African countries are said to be more at risk from climate change effects because of several factors including

limited skills and equipment for disaster management, limited financial resources, weak institutional capacity and heavy dependence on rain-fed agriculture (Schilling et al., 2020; Welborn, 2018).

Disasters induced by climate change damage educational facilities and systems, threatening the physical safety and psychological well-being of communities and interrupting agricultural sustainability, which 70% of Africans depend on for livelihoods. For instance, Uganda has in past decades experienced more erratic rainfalls leading to frequent bursting of rivers, mudslides and landslides in areas like Bududa, changing weather patterns, drops in water levels. Relatedly, Uganda has also experienced increased frequency of extreme droughts that continue to lead to loss of lives and property of communities. Those living in the mountainous areas of Kasese, particularly the Rwenzori Mountains, have especially been affected by, for example, glacier melting which increases water levels in the Nyamwamba, Mubuku, and Ruimi Rivers (Mertens et al., 2016; Taylor et al., 2009).

While the motivation and need to address climate change are real and present, its translation into action lacks immediacy and severity. USAID (2022) has noted that while climate action is included as one of the 17 SDGs, climate impacts will affect and undermine global efforts to achieve virtually all of these goals. Whereas there are a number of existing solutions, there has been an over-reliance on technological responses with minimal attention paid to the role of social solutions. While several studies have been done on third mission activities of universities (Nabaho et al., 2022; Papadimitriou, 2020; Schnurbus, & Edvardsson, 2022; Nicotra et al., 2021; Axon 2015), there is insufficient literature on university-community engagement activities and programmes on climate change action, particularly in an African context. Most extant studies focus on technological solutions towards addressing climate change and are largely skewed towards the European and American higher education contexts. This provides an opportunity for the third mission by the universities to demonstrate their potential as effective approaches for addressing climate change and the multitude of benefits that can result from engagement programmes at universities in the African context. University community engagements towards community-based carbon reduction strategies are but one example of collaborative actions towards achieving sustainability and addressing climate change.

This study explored the views and perspectives of university staff and students regarding opportunities for university-community engagement (U-CE) towards climate change action in an African context at the case university. This was done to better understand the role of the third mission of higher institutions of learning in addressing the challenges of climate change and achieving a sustainable world. The key research question that guided the study was ‘What are the opportunities that might be able to support policy making and enhance the third mission programmes towards climate change issues at the case university?’

## Literature review

Climate change is defined as the shift in climate patterns mainly caused by greenhouse gas emissions from natural systems and human activities (Fawzy et al., 2020). There is scientific consensus that climate change is real, manifested through increasing temperatures, changing rainfall patterns, and increasing frequency and severity of extreme weather events, including drought, flooding, and cyclones.

There is a strong and growing impetus for universities and colleges to ensure that their presence within various communities is productive and transformative (Bowers, 2017). Similarly, there have recently been calls to use the SDGs as guidelines for socially responsive universities as key players in the race for sustainable development (Kestin et al., 2017). Alongside this positioning, there has been an increasing emphasis on the role of communities to facilitate and sustain carbon reduction practices. UNESCO (2015, p. 67) has argued that to promote climate change actions, players need to form or strengthen “partnerships and collaborations”. These could be formed between “education institutions, communities, public organizations, NGOs, local communities, entrepreneurs etc” (Virtanen, 2010).

There are numerous success stories of university-community engagement programmes across the globe and their efforts to achieve the SDGs, particularly climate change action. In the United States of America, universities started implementing the third mission of universities to have a positive impact on communities for sustainable development. The objective of driving sustainable transformation in particular regions and cities has even been elevated to an institutional priority. For example, the Berkley and San Diego campuses of the University of California have made tremendous efforts to accelerate a regional transition to a high-tech green economy and hasten the uptake of smart grid technologies and renewable energy (Trencher et al., 2014).

Raditloaneng (2013) highlighted a key opportunity for African universities to collaborate on projects that showcase their community service efforts addressing climate change within their regions. This is based on the ‘Impact of “Implementing the Third Mission of Universities in Africa (ITMUA) collaborative research project, 2010-2011”’. At the University of Botswana, it was felt that the SDGs serve as a benchmark and tool for a number of cross-cutting issues that are addressed in the university curricula such as community development, environmental awareness, global warming and climate change as part of university-community collaborations.

In Tanzania, at the University of Dar es Salaam, Ssekamate (2022) noted that the university is a leader in action on climate change in communities. This is done through outreaches and engaging local communities in adaptation initiatives that are simple and friendly or easy to implement, supported by the research conducted on climate change. However, Ssekamate observed that there is a need to have these local-based

adaptation initiatives supported or rooted in communities themselves, rather than imposing unsolicited science-based information onto our local communities.

In Uganda, Ssekamatte (2022) has noted that some universities like Makerere have been implementing several training, research, and community engagement programmes with regard to climate change education. Ssekamatte indicated that the training programmes were short courses, seminars, undergraduate and postgraduate programmes on climate change. The universities conduct various research programmes mainly on climate change adaptation. Findings from Ssekamatte's study showed that implementing units at these universities conducted sensitization events, local adaptation community initiatives, policy engagement events, climate change festivals, and identification as well as empowerment of climate change champions in various communities across the sampled group.

### Theoretical framework

With recent calls to Africanise African Studies and a wave of deep knowledge work excavating African intellectual traditions within African universities, the key findings on university community engagement opportunities to address climate change issues were generated based on the *Ubuntu* theory. This is a deeply held African philosophy with ideals of a community rooted in interconnectedness with others (Tutu, 1999). It is regarded as a key cultural strength of communities (Nkosi & Daniels, 2007), and can be used as a theory of higher education in Africa (Waghid, 2020). Educators and researchers, especially in African contexts, have the twin responsibilities of embracing *Ubuntu* and using the values of *Ubuntu* and other African philosophies to arrive at solutions to African societal problems and achieve sustainable development (Rajah, 2019; Boogaard, 2019; Mosia, 2023).

With the overwhelming consensus that global climate is changing, largely due to human activities, with heightened risk levels for social and ecological systems, *Ubuntu* provides an epistemic framework to arrive at solutions to such community problems (Okoliko & David, 2021). Thus, using this theoretical lens, the researcher asked study participants across the case university to share their views, perspectives and opinions regarding the practical university-community engagement opportunities that can be tapped into/explored to address issues of climate change in the African context. The study of these opportunities was based on the key interrelated tenets of *Ubuntu* as a theoretical framework of interdependence/human interconnectedness, reciprocity (mutually beneficial relationship) and communalism/collectivism/solidarity.

To better understand practical university-community engagement (U-CE) opportunities to address issues of climate change, *Ubuntu* principles assert that social responsibility, interdependence with and social concern for others, society and the

environment and civic engagement ought to become a central part of the mission of African universities. More specifically, a philosophy of higher education in Africa is intertwined with a notion of *Ubuntu*, an African dictum for human interdependence and its associated link with actions such as social responsibility, citizenship, and an attentiveness to otherness. Of course, it is important to note that the researcher is not denying that Western forms of inquiry can contribute significantly to enhancing relations among individuals, institutions and community, most notably the practice of deliberation that emanated from Western forms of human engagement. However, the contention is that African moral theory has the potential to rupture those Western practices that seem to be remiss of advancing communal humility, interdependence, social justice, and reciprocity of actions towards sustainable development. The *Ubuntu* framework thus gives an opportunity to recover, present and enable valorization of African epistemologies from early African thinkers to explore African-context based university-community engagement opportunities to address issues of climate change. Climate change impacts affect continents differently and thus U-CE in Africa ought to be addressed in relation to a defensible rationale or plausible philosophy.

Notably, national development and achieving SDGs in the twenty-first century is dependent on a particular understanding of higher education, which cannot simply be aggregated to a dearth of appropriate ontology, epistemology, expertise, African value-laden social responsibility and catching up numerically with the rest of the world. According to Nyerere, higher education needs to address the realities of African societies and foster the social goals of living together and working together for the common good (Nyerere, 1968). Thus, the study appropriated concepts from the theory such as interconnectedness, indigenous knowledge, corporations, interdependence, and collaborative practices. These concepts helped in investigating the U-CE activities and programmes that the case university engages in to address climate change issues, and the ways in which these different activities and programmes are developed and coordinated between the university and the community. The theoretical framework provided a better way of collecting relevant contextual information and understanding the challenges, drivers, and opportunities available for U-CE towards climate change action at the case university.

## **Approach and methodology**

Based on an interpretivist paradigm, this study adopted a qualitative approach and a multiple case study design according to Yin (2012). Drawing on this approach, and as recommended by Creswell and Clark (2018), qualitative research investigates the understanding and interpretation of individuals regarding their social worlds

which leads to the epistemological position of interpretivism (Alharahsheh & Pius, 2020). In line with this multiple case study, the interpretivist paradigm locates this study through recognising negotiation between the researchers and the researched to produce an account of the insider's perspective, so both the researcher and the researched are 'present'. The data are accounts, which researchers then code for emergent themes, look for connections, and construct higher-order themes (Hancock et al., 2001). Notably, Yin (2012) opines that a multiple case study design enhances literal replication which may help to yield theoretical constructions that can be replicated across cases of the same contexts. Using this design, the researcher considered data generated from Makerere University in Uganda. Makerere University is Uganda's oldest public university, situated at the centre of the capital city Kampala. The university acknowledges knowledge extension and outreach services as its third mission (community engagement) programmes.

Makerere University being the oldest institution of higher learning in Uganda (and East Africa) plays an exemplary role to other public and private universities in Uganda. First established as a technical school in 1922, Makerere University is not only Uganda's oldest institution of higher learning, it is also its largest. Today, Makerere University is composed of nine colleges and one school offering programmes for about 36,000 undergraduates and 4,000 postgraduates. Sustainable development is embedded in the university's core ideology. Its centre for climate change and Sustainability Research Unit (SRU) are the dedicated interdisciplinary research group focusing on the sustainability of complex social-ecological systems in the communities through improved collaboration toward the SDGs. This chapter presents findings from a larger study conducted in 2023 to explore views and perspectives of staff and students regarding opportunities that Makerere University in Uganda can utilize to address issues of climate change. The selection of the case university was therefore purposive.

Data were generated using semi-structured in-depth interviews of 5 university staff and 5 community leaders and focus group discussions with 10 students undertaking programmes and courses related to climate change and sustainability at the case university. For both interviews and focus groups, an audio recorder was used during data generation which later enabled the researchers to transcribe the data for analysis. Data were analysed using Braun and Clarke (2006)'s six-phase thematic analysis model. The analysis began with a thorough reading of the transcripts to familiarize the researcher(s) with the data. The researchers then generated initial codes with the help of MAXQDA software. The codes were then categorised to help in searching for themes that were later reviewed and a final list of themes that answer the research questions was reached. The final themes were then written up into this chapter.

## Key findings and discussion

Talking about what they think of the opportunities, the university staff, students, and community leaders from Makerere University noted the following opportunities for effective university community engagements and climate change action in the context of Africa. The analysis revealed several opportunities, which are organized in five categories as presented in Table 1.

**Table 1:** *Views and Perspectives of University Staff, Students, and Community Leaders Regarding Opportunities for the University to Contribute to Climate Change (CC) Mitigation and Adaptation through University-Community Engagement (U-CE)*

Theme	Categories
Opportunities for using the third mission of the university to contribute to climate change mitigation and adaptation	<p>Institutional commitment to community engagement towards climate change mitigation and adaptation.</p> <p>Leveraging traditional conversation spaces (<i>Barazas</i>) for U-CE and pathways for sensitization.</p> <p>Incorporating CC indigenous knowledge in mainstream academic and engagement programmes.</p> <p>Harnessing women's knowledge, experiences and contribution towards CC mitigation and adaptation practices.</p> <p>Community empowerment and income diversification as key to building climate resilient communities.</p>

### Institutional commitment to community engagement (CE) towards climate change (CC) mitigation and adaptation

The university staff and students viewed institutional commitment to community engagement programmes as a core opportunity for any African university (like Makerere) to reach out to its indigenous communities about problems that they face. Participants felt that for effective university community engagement and climate change action, there needs to be explicit commitment from the university management and administration in terms of unending actualization of community engagement policies, budget allocations, broad staff understanding of and support for CE, infrastructure, faculty roles and rewards, and integration of engagement activities into other aspects of institutional work and academics.

Despite the review of documents showing that Makerere University acknowledges CE as one of its core functions and with some aspects of CE integrated into its curriculum and policies, some of these CE programmes remain largely unsupported

and the contributions to CE are inadequately rewarded. The university staff, community leaders and students in this study believe that for any community engagement programmes regarding climate change to be effective and meaningful, university management ought to establish a more explicit leadership structure for engagement, set aside a specific budget for engagement programmes on climate change action, regulate the sensitization/dissemination of climate change information to communities, review institutional policies to accommodate mandatory student engagement, advocate for changing the incentive regimes of African universities and set aside a specific budget for engagement programmes on CC action, among others. These sentiments are expressed in the following statements:

*“In my experience and interest in community engagement, I think that one of the things that need to change is the incentives in universities, incentive regimes in universities need to change. Now, whereas universities are expected to do community outreach, in essence, the incentive regimes do not promote that. In universities, you hardly have any incentive, for example, promotion, because you’ve been doing community engagement, at least for Makerere University.”*

*“Research should be separated from extension because currently, we receive funding which is for both. But usually whenever you’re planning for both, as a researcher, the experience I got is that researchers do a lot of desktop work, which is less (financially) compared to community work. Community engagement can have an established budget on its own.”*

Undoubtedly, it is the university staff members’ belief that the university’s commitment to have explicit structures, funding and support for community engagement programmes on climate change action could enhance a range of possibilities of engaging members of the public with the design, conduct and dissemination of research – all with the goal of generating mutual benefits by enhancing the quality and socio-economic impact of research. Mugabi (2015) notes that, if effectively actualized, it also facilitates the exchange of knowledge between universities and external communities, enables universities to mobilize external funding and enriches the learning experiences of students. Accordingly, it is unsurprising that Makerere University recognises the importance of the involvement of external communities in its academic activities and decision-making processes. The university needs to show serious commitment and actualization of this recognition (of community engagement) through holding consultative conferences within communities (especially local) during which it shares information with, and involves, other external stakeholders in its decision-making processes. Underscored and guided by *Ubuntu* values, more attention needs to be given to strategies that build on the social responsibility and civic engagement role of higher education.

## Leveraging traditional conversation spaces (*Barazas*) for U-CE and pathways for sensitization

The second category that emerged from the data relates to creating traditional conversational spaces commonly known (in African contexts) as *Barazas* not only to enhance university community engagement programmes on climate change action but also to create opportunities for shared awareness between the universities and communities. The *Barazas* is a semi-formal public gathering held in communities in African contexts at the behest of local administrators (Omanga, 2015). The aims of the *Barazas* are to pass on critical information, to deal with emerging information in a locality and to collect the views of the local community on certain issues. In this regard, participants indicated that this could give universities and communities a common ground and be able to position such institutions as being close and relevant to the communities, partners and action-oriented in their efforts to change the mindset and perceptions of communities about universities and engagement programmes. In similar sentiments, participants opined that such African traditional spaces would be fertile for universities to express commitment with different external stakeholders like national policymakers, scientists, local knowledge holders and local community members to deliberate on how to address climate change issues (knowledge, adaptation and mitigation). Some of the participants noted:

*“That’s what I called co-production of these frameworks. So, for instance, when you look at a community like Karamoja, Buganda which is now so congested with different tribes, and other communities of this country like Northern Uganda, Eastern Uganda, Western Uganda, where we’ve had their cultural and local knowledges still existing and is still in play. You cannot sit here in Makerere and come up with a community engagement project before reaching [out] to those people because they understand the local context very well. You have to look at what has been happening in their area that you can say, okay, if we need to change this, it should be in line with their local context such that people embrace it.”*

*“We can explore any local community spaces for conversations and sensitizations. For example, our local council meetings, local community meetings etc. this could create a platform where we can engage, share knowledge, and work together ... if there is this engagement opportunity, then we could be sharing with them the challenges that communities are facing, actually includes what students are facing, and the issues that we have with them especially to do with the environment. Thus, a common local platform is very, very, very necessary.”*

Such traditional spaces can also provide another alternative room for awareness creating. According to the university staff and community leaders, this opportunity can provide a dialogue space among local communities, universities and other relevant stakeholders to identify climate change themes, challenges, and policy

questions to be addressed by relevant bodies like the National Environment Management Authority (NEMA), the National Forestry Authority (NFA), and relevant government ministries among others. These participants noted that preparing for these workshops should involve a variety of integrated activities aimed at building trust among the involved entities, such as local organizations and universities participating in forest-planting initiatives. Thus, during these workshops, the university can implement its third mission but also provide an opportunity for community members and university members to learn from each other, exchange knowledge, culture and experiences through showcasing the application of local knowledge in the use and management of climate change actions.

As indicated by the university staff and community leaders, the *Baraza*, in the form of an open-air meeting, needs to be convened by a local leader in collaboration with institutional leadership for the purposes of addressing climate change issues and to ensure that the government agenda and policy reaches the grassroots (Omanga, 2015). This traditional formal gathering is used for the purpose of interaction among different stakeholders. A *Baraza* is a forum arranged by the public administration aimed at consensus rather than debate. Actually, currently all Kenyan chiefs are required by law to convene at least two *Barazas* every month (Omanga, 2015). Underpinned by the *Ubuntu* values of collectivism and reciprocity, Makerere University can thus ensure a well-established relationship with local area chiefs, their assistants and village elders within communities in Uganda. This could be critical for disseminating information or enforcing relevant rules or conduct regarding climate change mitigation and adaptation and sensitization on climate change policies within their localities.

### Incorporating climate change and indigenous knowledge in mainstream academic and engagement programmes

Indigenous knowledge or African knowledge (used interchangeably) is experiential knowledge based on a worldview and a culture. This knowledge is passed from generation to generation usually by word of mouth and cultural rituals, and has been the basis for agriculture, food preparation and conservation, health care, education, and a wide range of other activities that sustain a society and its environment in many parts of Africa. It was clear from the university staff, students and community leaders in this study suggesting a bottom-up approach that they value African knowledge systems. It was clear that universities only seeing themselves as experts and sole knowledge creators creates unfair and unrealistic engagement with communities. Thus, exploring indigenous knowledge as a crucial element is part of the broader effort to move beyond the prevailing paradigm where universities merely extract information from communities. Instead, they should work with communities as

collaborators, recognising and valuing their knowledge systems. Moreover, this experiential knowledge is highly regarded and trusted by community members and its potential for addressing climate change would be fully valued and acknowledged were it to be incorporated in mainstream academic and engagement programmes. Regarding valuing traditional knowledge regarding climate change action, some participants noted that:

*“I talked about experiences, and especially the context of climate change, valuing experiential knowledge, tacit knowledge, rather than focusing on explicit knowledge, so, it’s part of that broader equation, that it’s one of the missing links, where communities have capacities, they have capabilities that are never valued in knowledge creation, knowledge use and practice.”*

*“Indigenous knowledge is very important and is becoming very critical and popular, because you cannot come up with innovations about climate change that are quite disoriented from the traditional knowledge. We can start from there, what is it that people can contribute, what is it that they already know, let us not assume that they do not know and avoid overdependence on the knowledge created at the university. Once people begin with what they know, they can integrate with what they do not know that can be accommodated with in their knowledge and resources.”*

Acknowledgement of and valuing indigenous knowledge systems in the African context are core for meaningful and constructive engagement opportunities to address issues of climate change. Building on what people know. As the saying goes, ‘the best scientists are the practitioners’, because they have field experience. It should never be assumed that practitioners have knowledge about a phenomenon they experience on a daily basis. This implies that what universities can do is to take what is already possible in nature, or with people, and put it in a scientific way. So, the existence of indigenous knowledge on climate change mitigation and climate change adaptation strategies presents a valuable opportunity for cross pollination, as some communities may be more advanced in how they are addressing climate change issues. That presents an opportunity that this information can be disseminated or can be even modelled to predict what is likely to be because of the dynamic nature of indigenous knowledge. thus, in that way, universities can model and know how that is likely to change, maybe over the next 50 or 100 years, given the impacts of development on community in the Global South.

This opportunity provides an intersection of diverse worldviews and knowledge to develop contextualized programmes and activities and ultimately collaborate to create solutions for the natural environment. A representative of different communities can be engaged and knowledge exchange can occur across and between local communities together with the university knowledge experts. It would also expand the knowledge base and broaden contextualized policy options for informed and locally appropriate decision-making. Indeed, universities should consider

indigenous and local communities, whose traditional knowledge could significantly enrich global efforts towards climate change action. Relatedly, an *Ubuntu*-informed philosophy of higher education engagement in Africa has the potential to cultivate numerous programmes of reciprocated U-CE activities that can potentially enhance CC awareness, contextualized CC adaptation and mitigation practices within African universities and communities.

### Harnessing women's knowledge, experiences and contribution towards CC mitigation and adaptation practices

Despite wide acknowledgement of women's role and enormous potential leadership for sustainable development, there were clear concerns from participants that such women's capacity is not effectively integrated/activated especially in the African context where there are several constructions on the role of a women in society. Thus, there is still a need and an opportunity to mainstream gender knowledge, experiences and contribution towards climate change knowledge, mitigation and adaptation. Some university staff and community leaders suggested that universities need to work hand in hand with local communities and appreciate potentially integrated approaches suited to gendered equal contributions to climate change action, triggering new dynamic social spaces for women to engage for instance in policy formulation and decision-making.

*“All those constraints are what we can try to mitigate alongside climate change, so that a man and a woman are able to work better for the well-being of the family in the face of climate change. So that even the new interventions that are coming up target both, so that and primarily the woman, the woman, you know, because women are the ones who are always in the garden longer compared to the men, especially in northern Uganda, women are they like, they do a lot of work, they are the ones in the garden, men are just served food, they lie in the trading centres drinking.”*

*“Women knowledge and experience must be used. They face a lot of disadvantages, as we might, we might also know in terms of underlying social cultural construct, they don't own land, they don't own resources, in terms of income, rarely, they are harassed by the communities in terms of opportunity, the control of income, sometimes in the hands of a husband, if the woman makes the money. But in African setup, largely, women interact with land and the environment at largely, more than men, if both university and communities can work together to mitigate these gender-based exclusion and then utilize the opportunity, we could move faster in stabilizing the climate.”*

In order to mitigate social-cultural constraints that limit women's full participation in engagement programmes towards climate change action, participants feel that there is a need to effectively utilize women's experiences with the environment, their knowledge with agriculture and climate change to efficiently implement mitigation

measures that are gender sensitive. This means that a feminist approach to climate change action not only addresses injustices and barriers that keep people from participating in sustainable change but encourages all people to work together toward climate-resilient and sustainable development. In an African setup where women have no say on environmental issues, as in most communities, land ownership and decision-making, universities and community leaders ought to initiate engagement programmes on climate change action that are explicitly geared towards inclusion.

As noted by the participants, gender justice is key to an effective climate action especially policy. In fact, if universities and communities effectively explore gender equitable structures, it could prove to be a crucial factor in reducing Uganda's greenhouse gas emissions and building resilience among community members. Due to the widespread, gender-specific distribution of everyday tasks and care work in different African contexts, women have specific knowledge and skills as providers, educators, energy users, and land managers while they work in agriculture in most rural setups. Therefore, they have important knowledge to deal with the climate-related risks to water and food security. Relatedly, indigenous peoples, especially indigenous women, are crucial knowledge carriers for biodiversity conservation and climate action. Their transformative potential can only unfold if their rights are respected and they are participating in political processes. Actually, the Paris Agreement declares gender equality as a principle in addressing climate change. The implementation of the Paris Agreement and the 2030 Agenda for sustainable development requires a just transition of our societies. In the process, discriminatory structures must be removed and an empowering environment for women and disadvantaged groups must be created to ensure values of collectivism and unity in approaching societal problems.

### Community empowerment and income diversification as key to building climate resilient communities

University students and community leaders thought that both universities and communities can collaborate to empower community leadership, resilience to climate change impacts and at the same time strengthen their sources of livelihood to restrain them from tampering with the environment and other carbon sinks. Participants noted that building strong capabilities and capacities at the local level could be crucial in sustaining climate change action and engagement efforts between universities and communities. Some university staff, students and community leaders argued that there is a need to fundamentally shift the current paradigm of thinking and action within the universities. This shift should start by strengthening institutional arrangements and capabilities at the local level, enabling people to adapt their skills as changes occur and anticipate future challenges. It was further noted that a chance should be given to community-based research arrangements through

community-based information exchange to stimulate community-based adaptation and mitigation measures. To this, a participant added that:

*“We need to ask ourselves what is driving the community members to destroy the environment. Our biggest hurdle is poverty and hunger, that is why you have all this charcoal burning, swamp destruction and other causes of climate change. Once we understand this, can we look for avenues to empower these community members. I believe if civil society, university management and us community leaders combine our efforts, we can improve the livelihoods of these community members.”*

*“We should develop small group or neighbourhood models or household models where people come up with ideas of how they would want their neighbourhood to look like or what they would want to have or the policies they want or the things that they would want to follow and how they would conserve and protect their environment. So, in those small groups, I can say about 10 homes, they will have a leader who effectively checks on the progress of these ideas they come up with to effectively involve the communities.”*

Continuing support for income diversification is required to ensure that effective capacity is maintained and strengthened. Universities engaging closely with a range of different community groups and associations in developing and implementing project activities can assist communities to more effectively build their capacity to provide ongoing support for local adaptation actions in a collaborative and holistic manner and reduced destruction of the environment. Across many rural communities in African contexts, rising temperatures and unpredictable rains are upending food security and diminishing already low structured household income. A collaboration of universities and communities can come up with a comprehensive plan for climate risks, take up or have trainings on climate resilient agribusiness practices to strengthen their livelihoods through diversification, knowledge about climate resilient agricultural commodities like cowpeas, sunflower, and peanuts.

## **Conclusion and discussion**

It was clear from the perspectives of community leaders, university staff and students that with a rapidly closing window of opportunity to secure a liveable and sustainable future for all, university-community engagement offers African universities contextualized opportunities that are necessary and can accelerate climate action. The choices and actions implemented might be able to support policy making and enhance the third mission programmes towards addressing climate change issues and sustainability at African universities and communities. University-community engagement that involves all partners is the glue that creates trust, generates new lines of work, funding, inclusion, income diversification and keeps shared goals as well as expectations visible to both universities and communities. The actual core work of the engagement is building reciprocal relationships between communities

and universities (as per *Ubuntu* theory) that endure beyond individual projects or grants to programmes that enhance climate action and scales the impact to entire communities. In this way, engagement opportunities can build sustained relationships that respect the needs and interests of all partners, and assessment as a constant tool for reflecting on our contributions and benefits should often be used, thus building deeper and more authentic reciprocity.

Ultimately, careful implementation of these context-specific opportunities can help reduce the worsening impacts of climate change caused by human activity. Findings suggest that observed widespread and substantial impacts and related losses and damages attributed to climate change can decelerate through synergies between universities and communities. Impacts are driven by changes in multiple physical climate conditions, which are increasingly attributed to human influence. To effectively utilize these opportunities, CE at African universities requires each university to pay attention to its institutional context, such as history, disciplinary focus, location, ownership, mission, culture, values and community engagement priorities, and national policy agendas. As postulated by Rajah (2019), the conceptualisation, implementation and sustainability of CE programmes in African contextualized higher education institutions (especially universities) should reflect indigenous epistemologies that build on African philosophies as its core foundations. This can be possible through synergy to advance policy development and target-setting at university and community levels, particularly in relation to climate change knowledge, mitigation, adaptation as well as enhanced transparency of engagement programmes on climate action and support.

Deep, rapid, and sustained engagement programmes on mitigation and accelerated implementation of adaptation actions would reduce projected losses and damages for humans and ecosystems and deliver many co-benefits, especially for universities and communities. Climate resilient development benefits from drawing on diverse knowledge. Diverse knowledge and values include cultural values, indigenous knowledge, local knowledge, and scientific knowledge. The U-CE opportunities towards climate change action itself can be the game changer: its holistic view makes adaptation everyone's responsibility and shows that the two entities ought to infuse engagement programmes with climate considerations to successfully adapt. At their core, these engagement opportunities are about biodiversity and about protecting the most vulnerable.

## Recommendations

The universities ought to prioritize inclusive, transparent, and equitable decision-making, and improve access to finance and technology by community members. To actualize such opportunities, universities and community leaders should ensure that

all voices are involved in planning and decision-making and that communication channels remain open on both sides. Universities should emphasise the need for intentional processes that ensure all have a voice in planning, problem-solving, and management of the engagement programmes. Shared control can also help keep the entire partnership alert to the need to bring in community members on board as engagement programmes evolve.

Universities and their partners should embark on a re-imagining process to understand the intellectual, scholarly, and demonstrable work needed to support the university's transformative engagement agenda towards climate change issues. The process of this re-imagination can involve developing an understanding *of*, and continual support *for*, engagement programmes, as well as providing strategic direction to the hybrid engagement praxes across the university through well laid university community engagement structures.

African universities need to develop a community of practice to guide the Africanisation and decolonisation of engagement programmes on climate change action to foster a diverse, inclusive, and representative engagement rooted in knowledge democracy. HEIs should endeavour to seek feedback from and interaction with communities in order to investigate and co-create processes that will guide engagement programmes. Local traditional platforms should be consistently utilized as collaborative multi-stakeholder spaces of exploration for the positioning and re-positioning of the engagement and transformation interface of African universities. It is both a feasible and doable option for re-imagining the engagement programmes as a university in service to society.

Government, civil society and other university and community partners ought to create and avail incentives and funding opportunities to both the universities and community-based organizations and associations that aim to support and achieve income diversification. For instance, this can be through availing fairly competitive grants for universities, wealth creation programmes for community members that can ably enhance university-community engagement activities and also scale up community resilience to effects of climate change like poverty and food insecurity.

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