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University community partnerships for climate change adaptation in Malawi: a human development perspective

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Declaration

I, Chimwemwe Phiri, declare that the thesis that I herewith submit for the degree Doctor of Philosophy with specialisation in Development Studies at the University of the Free State, is my independent work, and that I have not previously submitted it for a qualification at another institution of higher education.

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Abstract

Although higher education can play a catalytic role in the attainment of Sustainable Development Goal 13 (climate action), there is less attention given to the role of universities in achieving climate adaptation through partnerships with local communities. In the Malawian context, universities have been credited for partnering with local communities as a pathway towards designing context-specific climate adaptation strategies. For instance, five of the six universities in Malawi are recognised by the government as actively engaged in climate change mitigation and adaptation initiatives. However, despite these partnerships, there is a lack of evidence on what they look like in practice, what they can achieve, and whether they create an enabling environment for advancing strategies that are driven by local communities and that advance community well-being. Community well-being is conceptualised from the human development approach as the ultimate goal of development, where communities can be or do what they value in order to flourish. Drawing from the human development paradigm, this study investigates how universities contribute to improving vulnerable communities' adaptation to climate change in Malawi through university-community partnerships. Data from this qualitatively-designed case study of Lilongwe University of Agriculture and Natural Resources in Malawi was collected through semi-structured interviews and focus group discussions. University lecturers (10), support staff (2), third-year students (10), community members (18), policymakers (4) and climate change experts (2) participated in this study.

The findings show that university-community partnerships in Malawi, and in Africa more broadly, have the potential to positively influence how global development challenges such as climate change are defined, understood, and addressed in ways that are contextually sensitive. The findings also offer contrasting and critical views, suggesting that while partnerships can enhance sustainable community well-being, they seldom achieve this. This is because partnerships can stimulate innovative ideas for adaptation strategies and capacitate university and community members to broaden opportunities for generating income and to widen their skill set for addressing climate change, but they do not offer adequate space for bottom-up initiatives or allow for inclusive decision-making. These partnerships also tend to advance university interests at the expense of creating more equitable outcomes for local communities. Thus, the study considers what university-community partnerships might look like if they were to be more inclusive and equitable. It identifies four key dimensions of a human development-centred framework: 1) equitable relationships; 2) inclusive decision-making; 3) streamlining resource efficiency; and 4) sustainable community well-being. The study further makes a case for harnessing the role of

bounded agency across the four dimensions, as structural and institutional arrangements can affect the interplay of individual motivations for undertaking interventions. Drawing from this framework, implications for the initiation and implementation of future university-community partnerships in sub-Saharan Africa are considered.

Keywords: climate change adaptation; university-community partnerships; human development; Malawi; Africa.

Dedication

This thesis is dedicated to my late father, **Paul Sam "Mnzwanya" Phiri**, who made countless sacrifices to ensure I received an education. He believed that education was the key to unlocking opportunities and creating a better life for oneself and one's community. His unwavering belief in the transformative power of education has been a constant source of inspiration for me, and I am grateful for his guidance and support.

My life has been full of struggles, although many may not know this. Despite my father struggling financially for most part of his life and never having had the chance to pursue higher education, he instilled in me a deep appreciation for learning and a determination to succeed. When I faced challenges along the way, including financial struggles that forced me to withdraw from the seminary, my father never lost faith in me. He reminded me that hard work and perseverance were the key to success, and his unwavering support gave me the strength to keep going.

Although my father may not have had the financial resources to fully realise his vision for my education, his wisdom and values continue to inspire me. I am deeply indebted to him for his sacrifices and his unwavering belief in my potential. May his soul rest in peace.

Thank you for reminding me that "being a son of a driver doesn't mean I should end up being a conductor"

When I had completely given up hope and made the choice to pursue a career in football, a glimmer of hope suddenly appeared. And this is to you, my uncle **Jacob Jimu**, a true beacon of selflessness and generosity who stepped in when I needed it most. At a time when my educational path seemed uncertain due to financial constraints, you stepped in, providing me not only with shelter, food, and financial support, but also with boundless encouragement and belief in my potential. From helping me complete my secondary education to sustaining me through my college years, you have been my steadfast guardian and mentor. Even as you pursued your own master's degree, you selflessly dedicated your meagre stipend to support my well-being. Few would undertake such a noble act, and for this, I am forever indebted. Your actions laid the foundation of what it truly means to be human and the depth of compassion that defines humankind. This thesis is not only a tribute to your role in my life but also a testament to your profound

impact on my journey. I dedicate it to you with deep gratitude, pride, and hope that it serves as a small token of recognition for the immense contributions you've made.

Your belief in me has shaped my destiny, and I can only aspire to continue living up to the values and principles you've instilled in me.

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the world of doctoral studies, and his untiring encouragement and motivation inspired me to apply and enrol in the PhD programme. Throughout this rigorous academic pursuit, Martino remained a constant source of inspiration, engaging in countless lengthy conversations about my research, providing invaluable insights, and bolstering my determination. Aside from academia, I am proud to say he thought he would imagine recreating his prototype in me to live after him; he sees me in him just as I do in him. His guidance and friendship in all my aspects of life have been nothing short of transformative, and I am profoundly thankful for his presence in my life.

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List of acronyms

CA – Capability Approach

CSA – Climate-smart agriculture

CUNIMA – Catholic University of Malawi

EMS – Economic and Management Sciences

EPA – Extension Planning Area

FAO – Food and Agriculture Organisation

FGD – Focus group discussion

GHG – Greenhouse gas

GoM – Government of Malawi

GUNI – Global University Network for Innovation

HD(A) – Human development (approach)

HDI – Human Development Index

HDR – Human Development Report

HoD – Head of Department

IPCC – Intergovernmental Panel on Climate Change

LUANAR – Lilongwe University of Agriculture and Natural Resources

Malawi-University of Business and Applied Sciences (MUBAS)

MGDS – Malawi Growth and Development Strategy

MW2063 - Malawi 2063 First 10-Year Implementation Plan

MPRS – Malawi Poverty Reduction Strategy Paper

MUST – Malawi University of Science and Technology

MZUNI – Mzuzu University

NAP – National Agriculture Policy

NCHE – National Council for Higher Education

NEP – National Education Policy

NESP – National Education Sector Plan

NGO – Non-Governmental Organisation

SD – Sustainable development

SDG – Sustainable Development Goal

UFS – University of the Free State

UNDP – United Nations Development Programme

UNFCCC – United Nations Framework Convention on Climate Change

Chapter 1 : Introduction, an overview and a prolegomenon

This thesis examines the partnership efforts between universities and communities to address climate adaptation challenges that disproportionately affect vulnerable communities in Malawi. The study primarily focuses on the university's role through university-community partnerships in creating opportunities for communities to pursue climate adaptation efforts that align with their interests. I analysed Malawi's university-community partnerships for climate change, specifically focusing on the Lilongwe University of Agriculture and Natural Resources (LUANAR) and its surrounding communities. This analysis critically examines the operationalisation of the university-community partnership in terms of scope, structure, functionality, and community perspectives. Drawing from the human development approach (HDA), the study argues for a human-development-centred adaptation framework that considers what university-community partnerships might look like if they were more inclusive and equitable.

1.1 The status and stance of the author

My decision to undertake this study was motivated by a combination of my professional background and personal experience as an undergraduate student, which both reinforced my dedication to this area of investigation. My academic journey has played a vital role in shaping my passion and commitment to pursue this PhD. While at LUANAR, I gained a solid foundation in understanding climate impacts on communities, especially during frequent interactions and practical engagements conducted with communities. After graduating, I worked for the Catholic Development Organisation in Malawi (CADECOM)/Caritas Malawi from 2014 to 2021, designing, implementing, and monitoring climate resilience programmes across the eight Catholic dioceses in Malawi. I also worked as a Local Coordinator for the Scottish Catholic International Aid Fund (SCIAF), supporting SCIAF and Malawian partners in managing the UK Aid Match project on environmental conservation and climate-smart agriculture for climate change adaptation and food security.

During my time at LUANAR, I noticed that despite the presence of numerous non-governmental organisations (NGOs), communities' vulnerability to climate threats

continued to worsen. This observation led me to question the effectiveness of current development approaches and interventions in addressing climate change. I realised there was a knowledge gap in understanding how to design and implement effective climate change adaptation strategies that are contextually sensitive and responsive to local communities' needs. As someone passionate about sustainable development (SD) and community empowerment, I felt compelled to deepen my knowledge and skills in this area, so I enrolled in a structured distance learning master's programme in development studies at the University of the Free State in 2018. I was confident that this would equip me with the theoretical and practical tools to generate knowledge on climate change adaptation and develop evidence-based strategies that would help vulnerable communities. My research focused on assessing the effectiveness of NGOs in enhancing climate resilience in rural communities.

While writing my master's thesis on the work of NGOs in supporting climate adaptation strategies in rural communities, I realised that there was a need for further research to examine the role of universities through university-community partnerships in addressing emerging societal challenges such as climate change. Therefore, as a former student of LUANAR, I reflected on my positionality and personal experiences in contributing to climate adaptation efforts for local communities. This raised several critical questions that I felt needed to be explored further. For instance, I questioned whether my involvement in community partnerships was genuinely aimed at supporting communities or whether my primary goal was to complete my training programme and then graduate. I also wondered about the initiatives undertaken by university staff in the community and whose interests they prioritised. The key reflection point was to unpack why communities around the universities remain vulnerable to climate threats despite their proximity to abundant resources and expertise. I was also interested in exploring the role of communities in these partnerships and whether their voices were genuinely heard or subjected to a top-down narrative.

This reflection led me to develop a concept to examine these dynamics critically. I was interested in viewing the partnership from the community perspective and interrogating how universities support them, given that climate change has a major impact on their well-being. I felt that a PhD was necessary to answer these questions and contribute to the

development of more effective climate change adaptation strategies. I saw the PhD as the perfect chance to build upon my master's thesis, aiming to present a comprehensive narrative on how communities can be supported in building resilience from the perspectives of both NGOs and university stakeholders. The desire to build from my experience as a former student and to contribute to academic literature motivated me to explore how universities, through university-community partnerships, contribute to improving vulnerable communities' adaptation to climate change in Malawi. I realised a PhD would provide me with the necessary tools, knowledge, and platform to make a meaningful and lasting impact in university-community partnerships, given that it is an under-researched discourse in Malawi. Researching these areas can help identify gaps in knowledge, resources, and actions that universities, communities, and individuals need to take, to advance partnerships that foreground human development.

1.2 Setting the scene

Universities' potential to address emerging societal challenges such as climate change is widely acknowledged (McCowan, 2020; Yanda et al., 2010; Oreskes, 2004). Aside from being the hub of knowledge creation and teaching, universities have been challenged to integrate societal challenges as a means of building stronger and more resilient societies through different levels of community partnerships (McCowan, 2020; Leah Filho, 201) (Henderson & Bieler, 2017; Knuth, 2007; Cortese, 2003). Henderson and Bieler (2017) argue that through research and community partnerships, universities are crucial in providing a wide range of solutions to the challenge of climate change. It is therefore not surprising that universities' unique and critical role in addressing emerging transnational threats such as climate change is highly reinforced in the sustainable development goals (SDGs) (Kivaa & Maluki, 2021; Mc Cowan, 2020; Lok Sabha, 2017). Specifically, SDG 13 (climate action) calls for action to combat climate change and its impacts. The crisis of Covid-19 further reinforced the global call for universities to prioritise climate adaptation. This is because the crisis deepened poverty and undermined existing climate change adaptation efforts (Filho et al., 2023). Within the SDGs, universities are seen as a medium for understanding the key SD issues relevant across disciplines, understanding the SDG framework and how it can be applied, translating knowledge and skills in particular matters relating to SDGs and creating networks for collaboration in addressing the

complex challenges relating to SDGs (Tikly, 2020; Walker, 2022; Sachs, 2020). Such an understanding resonates with the Global University Network for Innovation (GUNi) Report (2019), which emphasises the importance of universities in fulfilling social responsibilities and addressing the needs of society. It advocates for a proactive approach by universities towards integrating the SDGs into local agendas, suggesting modifications to education, research, and engaging with local and global communities to foster SD.

From an African perspective, the SDGs are aligned with the African Union (AU) Agenda 2063, which focuses on specific development challenges affecting African countries. For instance, 15 of the 20 goals are directly linked to the SDGs. This implies that the targets set by the SDGs are not distant problems but tangible issues that exist in most African countries, including Malawi. In both the SDGs and AU Agenda for 2063, universities can provide leadership in the search for sustainable solutions to society's multidimensional challenges, of which climate change is a major one. Aside from teaching and research, there is a growing recognition of university-community partnerships as creative approaches to fostering community climate change adaptation (Rieckmann et al., 2021; Leah Filho, 2019). The idea of communities partnering with universities in the higher education discourse represents a shift from the traditional one-way top-down to a two-way model, where the latter emphasises interactive knowledge exchange between universities and communities (Bowers, 2017; Dempsey, 2010; Mtawa et al., 2015; Arabena, 2006). At the core of reinforcing university-community partnerships lies the enhancement of collaborations between the university campus and the local community (Kellogg Commission, 1999). Nevertheless, there has been less limited scholarly enquiry than one might expect into the characteristics and dynamics of these partnerships between universities and communities (Sathorar and Geduld 2021), albeit with some notable exceptions in Sub Saharan Africa. For instance, Mtawa and Fongwa (2022) explored the experiences and perspectives of community members in service-learning partnerships using the human development approach and highlighted the marginalisation of community voices and their lack of agency in these partnerships, focusing primarily on the benefits for universities. They proposed that service-learning partnerships can be made more equitable and inclusive for community members by focusing on the principles of reciprocity, mutuality, accessible communication, and sustainability. Sathorar and

Geduld (2021) explored the challenges and disjuncture that exist between the objectives of universities and communities regarding community engagement in post-apartheid South Africa and proposed a critical approach to community engagement by drawing on the three educational aims of critical pedagogy, which are humanisation, conscientisation, and problem posing. Preece (2013) introduces the concept of "adaptive engagement", which utilises theories of community development and organisation management to examine power dynamics between students and their community. However, several authors have raised concerns about the practicality and effectiveness of short-term projects compared to the long-term goals of community engagement. For instance, Fongwa, et al. (2022) have questioned both the feasibility and quality of such projects. Another issue is the lack of representation of community voices in research analysis, as highlighted by Sathorar and Geduld (2021), Mtawa (2019) and O'Brien (2012). The power dynamics between the community and the university in the context of community engagement have also been insufficiently analysed, as discussed by Preece (2013) and Parker et al. (2009).

The widespread and drastic changes to climate worldwide have led to higher education institutions, particularly universities, embracing climate change as a key emerging issue in the 21st century (McCowan, 2020; Feinstein & Mach, 2019; Filho, 2010). Climate change remains a threat to human development because it affects many issues, including livelihood support systems, which ultimately jeopardise efforts to achieve the envisaged SDGs (McCowan, 2020; Leah Filho, 2019). For instance, between 2000 and 2019, more than 475 000 people lost their lives worldwide, and losses of US$ 2.56 trillion were incurred as a direct result of more than 11 000 extreme weather events (Eckstein et al., 2021).

To demonstrate the global effects of climate change at the global level, certain regions in Southern Asia have been identified as particularly vulnerable and have experienced significant impacts such as decreased agricultural productivity, reduced availability and quality of water, adverse effects on aquaculture and fisheries, harm to ecological systems, and an increased prevalence of diseases like cholera (IPCC, 2007). As a whole, Southern Asia is grappling with the consequences of climate change and natural disasters, resulting

in heightened vulnerability to risks and hazards that ultimately diminish the socio-economic status of affected populations.

In Africa climate change has had a significant impact on a number of countries, exacerbated by high poverty levels and a reliance on agriculture for economic development. Despite efforts to promote agricultural development, climate change and natural disasters reduce yields, leading to declining national income and food insecurity (FAO & ILRI, 2008). Southern Africa is particularly vulnerable to floods, droughts, strong winds, hailstorms, earthquakes, pest infestations, and disease epidemics (Mkwambisi & Martin, 2014). Sub-Saharan Africa faces an overarching challenge of climate change, disproportionately affecting the most vulnerable segments of society (Serdeczny et al., 2016). This issue has compounded existing challenges, resulting in different stakeholders grappling with increasing complexity and uncertainty in decision-making (Cartwright et al., 2013). Moreover, inequality and poverty are deeply entrenched in Africa, and it is crucial to recognise that climate change perpetuates these social inequalities, often as significant barriers to meaningful participation and collaboration (Amin et al., 2015).

Vulnerability to climate change in Southern Africa is shown, for example, by Tropical Cyclone Freddy, which struck Southern Africa and the Indian Ocean in February and March 2023, resulting in extensive damage to infrastructure, loss of life, injuries, and displacement. In Madagascar, at least 17 people lost their lives, while in Mozambique, approximately 1.1 million people were affected. However, it was Malawi that suffered the most severe consequences from Cyclone Freddy, with more than 1 000 fatalities and more than 659 000 people displaced, while many individuals lost their homes and belongings as a result of the disaster (OCHA, 2023). Given the scale and urgency of the threats posed by climate change, many universities recognise this threat explicitly and have taken a leading role in preparing communities to adapt to climate disruptions (McCowan, 2020; Ramaley, 2014; Dyer & Andrews, 2011). An example of a stakeholder conference addressing climate challenges in Africa is the Tenth Conference on Climate Change and Development in Africa, titled *Just Transitions in Africa: Transforming Dialogue into Action*, which took place from 24-28 October, 2022, in Windhoek, Namibia. The conference aimed to address the urgent challenge of climate change and discuss

actions required for a just transition in Africa, focusing on just energy transitions, nature-based solutions and carbon markets, adaptation and building climate change resilience, climate financing, green growth opportunities and job creation, food systems and value chains, and youth engagement. Further, The African Federation for Emergency Medicine (AFEM) held its first-ever workshop on climate change and human health as part of the African Conference on Emergency Medicine in 2020. The workshop aimed to introduce the topic of climate change and its effects on emergency care in Africa and to discuss ideas for the way forward. It proposed developing curricula at all levels of health professional education and continuing medical education to enhance training quality and build leadership skills and address workforce shortages by better preparing providers for disasters and climate-sensitive conditions. Another example is The Africa Climate VI Conference 2013 (ACC2013), held in Arusha, Tanzania, from 15-18 October 2013. The conference convened different stakeholders, including academic community members, to deliberate on strategies to tackle climate challenges in Africa. A significant recommendation from the conference was the necessity for collaborative development of climate information and services between producers and users to ensure that the generated knowledge is practical, owned, and utilised efficiently and promptly for rural communities. As a result, partnerships between universities and communities were reinforced as a foundation for generating such local context knowledge.

1.3 Contextualising the study

1.3.1 The situation in Malawi

Malawi is a landlocked country situated between 9° and 17° south of the equator and 33° and 35° east of the Greenwich meridian in Sub-Saharan Africa. The country's economy heavily relies on climate-sensitive rain-fed agriculture, which contributes to both the national gross domestic product and foreign exchange earnings (Arndt et al., 2014). Additionally, more than 80% of Malawians depend on primary and secondary agricultural activities for their livelihoods (UNDP, 2019). The country has made notable progress in various areas, such as reducing maternal and child mortality rates, increasing school enrolment, and combatting HIV/AIDS (Government of Malawi (GoM), 2023; Mataya et al., 2019; IMF, 2017). However, climate change has had a significant impact on the country,

which has a subtropical climate characterised by dry and seasonal conditions (Fujisawa et al., 2020). Malawi is bordered by Zambia, Mozambique, and Tanzania, as depicted in Figure 1.1:

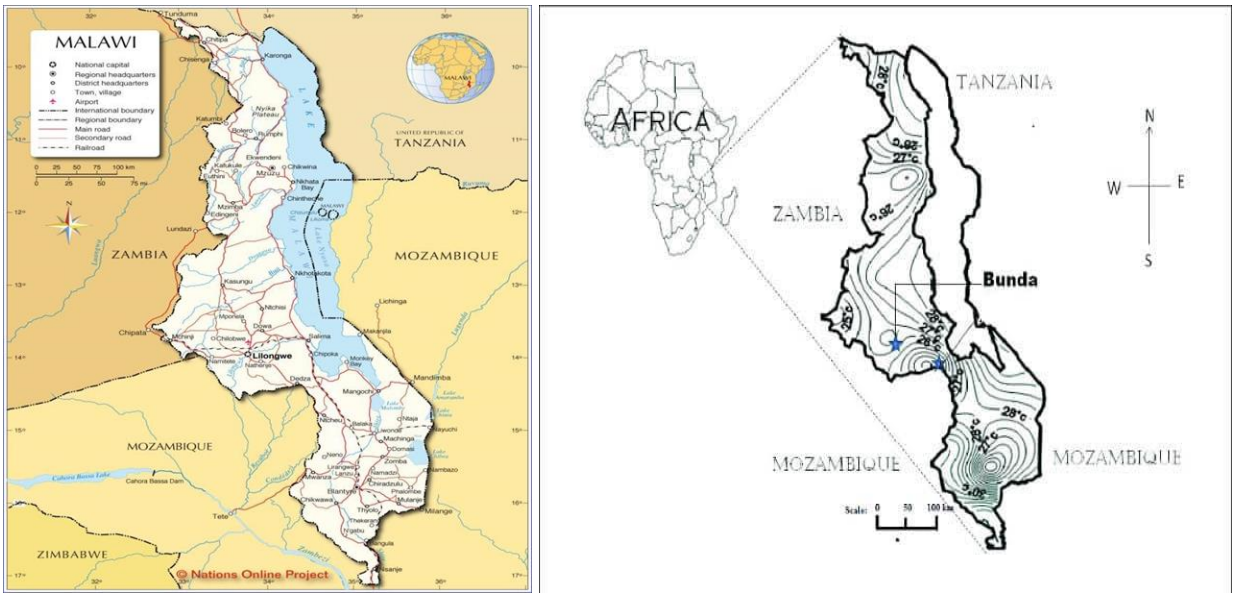

Figure 1.1: Geographical location of Malawi (GoM, 2015d, p. 11)

Malawi has a population of around 19. 2 million (Government of Malawi, 2019), with 66 percent living below the poverty line (UNDP, 2019). Malawi is in the low human development category on the Human Development Index (HDI), recording an HDI of 0.483 and a National Poverty level of 58.8 as of 2023 (UNDP, 2023). Inequality has also remained high, with a Gini Coefficient of 0.6 (UNDP, 2023). Malawi records a planetary pressure-adjusted Human Development Index (PHDI) of 0.481, accounting for the level of human development when planetary pressures are considered (UNDP, 2019). The country is ranked 170 out of 188 countries on the global United Nations Development Program (UNDP) Human Development Index (HDI), and the annual real GDP growth rate at an average of 4.1 percent in the past decade has been slow (GoM, 2023). Malawi's economy is mainly agro-based, characterised primarily by the production of maize as a staple food crop and tobacco as a main export for foreign currency. As such, the economy has struggled to maintain high growth rates that exceed the population growth rate. For instance, in 2018, the fertility rate was 4.2 births per woman, and the age dependency ratio, which measures the proportion of non-working individuals in the working-age

population, was reported at 85.6 percent in 2019. As a result, the per capita income has remained low, with an average of US$502 over the past 10 years (GoM, 2023).

As reported in the country's Vision 2063 national development blueprint, to attain middle-income status, the country requires annual growth of the economy at an average of seven percent. However, with a heavy reliance on an agrarian economy, climate change presents a threat and risk multiplier, hitting the most vulnerable people living in rural areas (GoM, 2023; Fujisawa et al., 2020). In light of this, the following section will delve into the specific challenges faced by Malawi in addressing climate change and its impact on vulnerable populations, particularly those living in rural areas.

1.3.2 Climate vulnerability in Malawi

Malawi's vulnerability[1] to climate change's effects is complex and dependent on various factors. Firstly, Malawi is among the world's poorest countries, with a significant proportion of the population relying on low-output rain-fed agriculture (GoM, 2023; Zulu, 2017). Climate-induced shocks, such as the 2019 Cyclone IDAI, disrupt production, leading to increased hunger and poverty among poor communities. Secondly, Malawi's productive sectors rely heavily on natural resources, with agriculture ranking first (Bie et al. 2008). As 80% of the population lives in rural areas and depends on natural resources (GoM, 2018), the depletion of natural resources threatens the achievement of several SDGs, including no poverty, zero hunger, responsible consumption and production, and climate action. Thirdly, Malawi's population continues to rise at an unprecedented rate, with a 2.7 percent increase from 2019, putting pressure on natural resources as more land is used for agriculture and forests are harvested for fuel supply (GoM, 2021).

The 2015 Paris Agreement on Climate Change emphasised supporting university-community partnerships in developing nations to generate context-specific solutions (Ssekamatte, 2020). However, universities, particularly in sub-Saharan Africa, face challenges implementing partnership interventions with rural communities due to inadequate research funding (Teferra & Albach, 2004). Additionally, African universities

[1] Climate vulnerability refers to the degree to which a particular community, region, or ecosystem is susceptible to harm from climate change impacts

have limited engagement with climate change, and across African universities, there is scant discussion on university-community partnerships as a means of climate change adaptation. In Malawi, university-community partnerships are only recognised as crucial for accessing traditional knowledge and context-specific solutions for community adaptation efforts (Chisale et al., 2020; Saiti et al., 2014).

As noted earlier, climate change is a huge development challenge for Malawi because it affects key sectors that drive the economy and livelihoods among its population (GoM, 2019; IMF, 2017; Kalanda Joshua et al., 2016). With an agrarian economy, climate change threatens rural communities' economies and general livelihoods. The country has already experienced major climate-induced disasters such as Cyclone Idai and El Niño, threatening further livelihoods, as well as Cyclone Freddy, which claimed more than half a million lives, disrupted many people's lives and destroyed crops and property, rendering most households helpless (GoM, 2023).

Growing awareness of climate change impacts on Malawi's economy is arguably the main reason for including and prioritising climate change in the national development strategies. The country's new developmental framework, Vision 2063, and the subsequent implementation strategies, recognise climate change as a critical priority area for the country (GoM, 2021). Nevertheless, the government has acknowledged research gaps in the universities in supporting communities to adapt to climate shocks (GoM, 2019). Moreover, communities tend to be the recipients of already-designed interventions by government and climate change stakeholders, with little room for their input (Phiri, 2020). Equally important is Nkomwa et al.'s (2013) proposal for establishing a platform for dialogue between mainstream scientific research and indigenous knowledge holders in Malawi. Similarly, Mwase et al. (2007) noted that documentation of rural communities' perspectives is limited. These examples demonstrate the untapped potential for collaboration between different forms of knowledge between universities and communities, that could contribute to addressing the complex challenges posed by climate change.

Other policy frameworks, including the National Resilience Strategy (2017), the National Climate Change Policy (2016), the National Disaster Risk Reduction Policy (2015), the

Revised 2006 Malawi National Adaptation of Plan of Action (NAPA), the updated Nationally Determined Contributions (2021), and the Malawi Growth Development Strategies (MGDS I, II, and III), prioritise climate adaptation as a critical priority to increase the resilience of vulnerable populations and ecosystems. However, much work must be done to effectively implement these frameworks and policies. Speaking during the 10th RUFORUM Webinar (2020) on 'Engaging African universities in agriculture and food and nutrition security process in Africa: a policy perspective', the then Minister of Agriculture and Food Security, Hon. Lobin Lowe, reiterated the need for more research partnerships to address challenges confronting food and nutrition security issues including climate change. However, there appears to be limited emphasis on utilising the expertise and resources of universities to collaborate with local communities in designing local adaptation solutions. For instance, Ntupanyama et al (2008) suggested for the need to support communities with superior plant material that could survive in a different soil from their natural habitats. Similarly, the lack of skills and information on appropriate strategies among communities to adapt to the impact of climate change was viewed as a major barrier for community adaptation efforts (Mwase et al., 2014)

1.3.3 A background on universities in Malawi

The context of university establishment in Malawi is similar to most post-colonial African countries, where universities were established to educate professionals, enable access, and generate knowledge for socioeconomic advancement and political transformation (Kadzamira & Kunje, 2002; Lwanda, 2002). The country's first university, considered as the largest tertiary institution, the University of Malawi (UNIMA), opened its doors in 1964 and was later expanded to comprise five constituent colleges, namely Chancellor College, the Polytechnic, Bunda College of Agriculture, Kamuzu College of Nursing and the Malawi College of Medicine. In unpacking the vision of the university, the founding president, Dr H.K Banda, while opening the university, stated that:

> The university should be a part of the life of the people ... We have to teach [outside things to give students a world context and appreciate how others live]. Still, we have to make the university meet the needs of this country. After all, this is Malawi, Britain, Germany, France ... Our university has to be part and parcel of the people. (as cited in Lwanda, 2002. p.111)

The vision spells out the commitment of the government to ensure that the university is part of the local community and responsive to addressing the needs of local people. Given the growing population and the need for access to higher education, Mzuzu University was also formed in 1997 and the Malawi University of Science and Technology (MUST) in 2014. In 2011, an Act of Parliament No 22 delinked Bunda College as a constituent college of the University of Malawi and merged it with Natural Resources College to form Lilongwe University of Agriculture and Natural Resources (LUANAR). In 2019, the parliament approved the delinking of UNIMA into three distinct universities: the Malawi University of Business and Applied Sciences (MUBAS), the Kamuzu University of Health Sciences, and the University of Malawi. This means Malawi now has six public universities.

However, despite the country's expansion of higher education provision, Mambo et al. (2016) argue that the higher education system in Malawi is still in its early stages, with up to 60 percent of deserving students failing to get in. Further, the authors argue that the national development needs and priorities are not adequately reflected in the higher education system despite each university being established with a particular ideological or developmental agenda. Masache Nkhoma (2019) noted a mismatch between the university's vision and addressing the needs of communities due to the curriculum grounded on a Western[2] ideology conceptualisation of human development. Mazinga (2021) further argued for a contextual university oriented towards promoting rural human development in its preparation of graduates. Chamdimba (2021) argued that the potential for universities in Malawi to contribute to national development is deterred by inadequate funding, thus limiting their ability to make meaningful contributions. Despite this, higher education is considered a vital catalyst and resource for the country's economic growth and overall development, as recognised by the Government of Malawi in 1998, 2002, 2008, and 2016. The government acknowledges the potential of higher education in addressing societal challenges, including a climate adaptation response. However, the precise roles of universities in this regard have yet to be fully explored. Given the

[2] Mostly relates to human growth and progress that is rooted in Western cultural and philosophical traditions

considerable impact of climate uncertainties on the country's economic advancement, the role of universities in addressing climate change becomes pivotal in aligning with the broader commitment to transition the nation into a prosperous and self-sufficient industrialised upper middle-income country, as outlined in the Vision 2063 developmental blueprint (GoM, 2021).

1.3.4 Universities and Climate Change in Malawi

The Malawi 2063 (MW2063) vision provides a roadmap for achieving this objective, emphasising economic growth, development, and social and environmental sustainability. Although the first 10-year Implementation Plan (MIP-1) of Malawi 2063 does not explicitly detail the role of universities in climate change adaptation, it does acknowledge the significance of universities in conducting research that informs climate response actions but does not specify the specific roles in regard to partnerships with communities for climate change adaptation. However, university roles in climate adaptation are recognised in climate-resilient policies. For instance, according to the Malawi Strategy on National Climate Learning Strategy (2021), the principal public universities engaged in climate change learning in Malawi include:

a) The University of Malawi (UNIMA),
b) Malawi University of Business and Applied Sciences (MUBAS).
c) Mzuzu University (MZUNI).
d) Lilongwe University of Agriculture and Natural Resources (LUANAR).
e) Malawi University of Science and Technology (MUST).
f) The Catholic University of Malawi (CUNIMA) is the sole private university presently involved in climate change learning programmes. Although undergraduate courses related to climate change are offered in the universities above, only the recently established MUST provides a complete BSc programme in climate change (GoM, 2021). However, postgraduate programmes that offer a research option in climate change have been introduced at the MSc level at UNIMA, LUANAR, and MZUNI.

However, findings from capacity needs assessment studies conducted in Malawi regarding climate change learning in universities and higher education institutions indicate significant deficiencies in the coordination and alignment of programmes and courses offered by these institutions (GoM, 2021). The lack of a systematic approach to

climate change learning programmes has led to insufficient coverage and a limited depth of climate change education in Malawi. While previous studies have primarily concentrated on the roles of universities in teaching and research, there has been comparatively less attention given to their potential partnerships with local communities. For example, GUNi (2019) has reported on the collaborations between academics, civil society, and the private sector. Another significant sector has been training professionals for newly created positions as district environmental officers under the Malawi Environmental Management Act (GoM 2017). Chiotha (2015) has extensively written on the role of universities in climate change education and curriculum development, while Bell and Payne (2021) have explored how universities can equip students with the skills, knowledge, and ethical frameworks to address localised climate challenges. Therefore, while universities have the potential to take collective action against climate change threats, their response has been insufficient, limited to just a few measures. To address the scale and gravity of the climate threat, universities must go beyond merely greening their research, curricula, and campuses and instead focus on partnering with communities to develop context-specific adaptation solutions. As several scholars argue, universities' most effective contribution to society has been through their third mission of community engagement (see Benneworth & Jongbloed, 2010; Nowotny et al., 2002; Gibbons et al., 1994).

Through partnerships, university and communities can spearhead climate change adaptation responses[3] that align with community needs. I follow Gruber et al. (2015), Broto and Bulkeley (2013), Adger, (2009) and Few et al. (2007) arguments that university-community partnerships offer a range of requisite technical expertise for local adaptation efforts. In undertaking this mandate, universities complement existing efforts by other stakeholders such as the government, NGOs, the private sector, and communities to strengthen community adaptive systems. However, calls for university-community partnerships signal a paradigm shift in viewing universities as institutions that traditionally only focus on teaching, research and innovation to extend their functions to engaging and

[3] Climate adaptation refers to adjustment in natural or human systems to a new or changing environment that exploits beneficial opportunities or moderates negative effects

working meaningfully with communities (Bhagwan, 2018). This shift would allow communities in countries most affected[4] by climate change to develop realistic adaptation strategies and implement climate change adaptation strategies that are context-specific and community-driven.

1.4 Statement of the research problem

Globally, partnerships between universities and communities (referred to in this thesis as university-community partnerships) have emerged as a crucial means of addressing the effects of the increasingly prevalent anthropogenic climate change. Given the intricate, interconnected, and unpredictable nature of the challenges associated with climate change, or "wicked problems" (McCowan, 2020; Leah Filho, 2021), it is difficult for governments, organisations, and institutions like universities, to reach consensus around a single approach to response (Stein, 2023). Existing literature on university responses to climate change has primarily focused on initiatives like greening the campus, university research on the impacts of climate change and measures to mitigate against it, or incorporating climate change issues into the curriculum (McCowan, 2021). While some argue that a new education and restructuring the curriculum are crucial to reorienting the roles of universities in climate change responses (Leah Filho, 2021 and Lotz-Sisitka (2014), expanding the discussion to include a broader range of functions for universities is becoming a dominant academic discourse (Rickemann et al., 2021). University-community partnerships are therefore gaining prominence because they promote knowledge sharing, mutual learning, and reciprocity. While acknowledging such prominence, Rickemann et al. (2021) caution that most partnerships are not structured to ensure all stakeholders are equally involved. Other scholars contend that given the traditional bias towards the academic side of the partnership, the initiatives are not well-balanced and portray what is called unbalanced problem ownership (Knapp et al., 2019; Lang et al., 2012). Nevertheless, the potential for university-community partnerships for addressing climate adaptation remains relevant. University-community partnerships could help in focusing on adaptation efforts at the local level, which is a logical response to the often site-specific nature of climate impacts and vulnerabilities (Few et al., 2007).

[4] Most of these are Global South countries such as those in the sub-Saharan region

This approach also allows for experimentation with innovative approaches at the local level (Broto & Bulkeley, 2013). By tapping into local knowledge, values, and attitudes, local-level adaptation planning can provide a tailored response that better understands the vulnerability of fundamental human and environmental systems, the communities' primary concerns, and potentially effective and acceptable responses for addressing those concerns (Adger, 2009; Collins & Ison, 2009; Winsvold et al., 2009).

Despite universities partnering with local communities to address climate challenges, very little is known about the operationalisation of these university-community partnerships in terms of scope, structure, and functionality in Malawi (GoM, 2019). To date, limited studies have explicitly addressed the question of community perspectives in these partnerships. However, community partners often express concerns about being seen as mere subjects, who are irrelevant for driving change, but are important as a means to an end. This raises the question of whether university-community partnerships genuinely provide opportunities for meaningful involvement of local individuals in adaptation efforts. Besides, if communities' views are considered, to what extent and how can knowledge be co-produced and made more relevant and valuable to communities? This study addresses this research gap by exploring whether and how university-community partnerships in Malawi can enhance vulnerable people's opportunities and choices to learn about and engage in climate change adaptation strategies to improve their well-being.

1.5. Aim of the study and research questions

The study's main aim was to explore how universities, through university-community partnerships, contribute to improving vulnerable communities' adaptation to climate change in Malawi.

The following research questions guided the study:

1. What are the motivations for and successes of existing climate adaptation partnerships in Malawi?
2. What key issues should be prioritised in these university-community partnerships for climate change adaptation in Malawi?

3. How do university-community partnerships for climate change in Malawi contribute to human development for people in vulnerable rural communities?
4. How can the human development paradigm foster the design of a university-community adaptation partnership that enhances community well-being in Malawi?

The ultimate goal of this research is to explore how current adaptation partnerships are put into action. It seeks to demonstrate if these partnerships create opportunities for local community participation and show that communities have resources that can lead to positive adaptation outcomes. The research also aims to unpack the potential opportunities for partnership adaptation, outline what should be prioritized in these partnerships, take into account the deeply entrenched social and political dynamics at the community level, and assess how the partnership interventions contribute to community well-being. This, hopefully, will contribute to thinking differently about how partnerships for climate adaptation should be framed to foreground human community well-being.

Therefore, to address the problem of the study, I adopted a human development approach as the main framework for the study. Regarding the methodological approach, the study adopted a qualitative approach to respond to the research questions. Below is a brief outline of the conceptual lens and methodology adopted.

1.6 Conceptualisation of the study

This study employs the human development approach as a normative framework to examine how university-community partnerships can enhance vulnerable communities' adaptation to climate change in Malawi. This approach, developed by Ul Haq (2003), advocates for a “people-centred” approach to development that prioritises the expansion of human well-being beyond economic growth (Stewart, 2019; Ul Haq, 2003). The first Human Development Report 1990 defined human development as “the process of widening people’s choices and the level of their achieved well-being” (UNDP, 1990, p. 9). The human development approach is well-suited to this study because it emphasises enhancing people’s capabilities and expanding their choices to lead a life they value. Additionally, the approach recognises the significance of empowering people to take control of their lives and participate in decision-making processes that affect them. The

human development approach was chosen to emphasise community needs at the centre of the adaptation partnership by creating opportunities for community involvement in decision-making processes. University-community partnerships are seen as a means of providing communities with access to knowledge, resources, and skills that can help them develop appropriate adaptation strategies for their context.

1.7 Methodological approach

Chapter 4 provides a detailed description of the research methodology, this section gives a brief overview of the methodology employed to address the study's problem. The study's primary objective was to understand the perceptions and experiences of participants interviewed on how the partnership provides opportunities for community involvement and whether it addresses the climate adaptation challenges facing communities. The study employed a qualitative case study of a Malawian university to achieve this objective. As Taylor and Bogdan (1998) noted, the qualitative approach allows researchers to understand participants' realities from their perspective. To comprehend how the university-community partnership for climate change adaptation offers opportunities for community involvement in the adaptation process, purposive sampling was utilised to select LUANAR as the case study site. The study sought views from LUANAR lecturers, support staff, third-year students, policymakers, experts on climate change adaptation, and community members. Data was collected using focus group discussions (community members) and semi-structured in-depth interviews (lecturers, support staff, experts, and policymakers). Additionally, the study reviewed documents related to the study's focus on gathering information on climate adaptation partnerships between universities and communities. Data transcripts were audio recorded, transcribed, and analysed thematically, from which the empirical findings are presented in Chapters 5, 6, and 7 and then theorised in Chapter 8.

1.8 Brief structure of the thesis

Chapter 1: Introduction: An overview and prolegomenon

Chapter 1 provides a general overview of the study by providing the stance and positionality of the author, setting the scene for the thesis and a section devoted to providing a brief description of the research problem statement, research questions,

methodology, and conceptual framework guiding the study. The section further provides an outline of the research and the definition of key terms used in the study.

Chapter 2: Literature review

The purpose of this chapter is to situate university-community partnerships for climate change within scholarly discussions by presenting literature on the roles of universities in university-community partnerships, climate change adaptation, and sustainable development. The chapter examines the origins and development of the roles of universities in climate change adaptation, tracing the historical trajectory both globally and specifically in Africa and Malawi. The chapter identifies gaps in the literature, which reinforces the importance of university-community partnerships in providing opportunities for local communities involved in climate adaptation initiatives.

Chapter 3: Conceptual framework

In the third chapter, I further delve into applying the human development approach as the conceptual framework for this study. The chapter begins by exploring alternative frameworks that could be applied to analyse the research and highlights their limitations, ultimately positioning human development as the most suitable choice. In this chapter, I present arguments in favour of the human development approach as an ideal method for comprehensively examining university-community partnerships for climate change adaptation in Malawi. Additionally, the chapter delves into a discussion of the fundamental principles of human development and their application within the study.

Chapter 4: Research design and methodology

Chapter 4 thoroughly explains the research design and methodology employed in this qualitative study, offering justification for my choices. This includes defining the study area, outlining participant selection criteria, describing data collection methods, specifying data analysis procedures, and discussing ethical considerations. The chapter also delineates how data was collected and analysed in detail.

Chapter 5: Motivations for and successes of existing climate adaptation partnerships in Malawi

This empirical chapter serves as a basis for comprehending the motivations of universities and communities for their engagement in adaptation partnerships. It provides insights into the potential opportunities in these partnerships to enhance adaptation initiatives. The chapter presents four themes derived from data analysis: a sense of fulfilling civic responsibility to address emerging societal challenges, enhancing students' preparedness, knowledge creation and scholarly recognition, and financial rewards. Additionally, the chapter discusses four themes related to potential opportunities: enabling environment, valuable resources, funding opportunities, and social capital and networks. The empirical data presented in this chapter is primarily drawn from interviews with lecturers and support staff, policymakers, third-year students, and community participants.

Chapter 6: Key issues to be prioritised in the university-community partnerships

Chapter 6 presents the perspectives of policymakers, experts, and community members on the critical concerns that should be given priority in university-community partnerships for climate change adaptation. The data analysis revealed three key themes. Firstly, establishing and sustaining relationships was emphasised as crucial, attributed to its role in clarifying and managing expectations and fostering mutual respect. Secondly, organisational processes and competencies were identified as priority issues, with participants highlighting the need to formalise structures at all levels, conduct ongoing capacity analysis, map assets, and develop a clear exit plan. Thirdly, community engagement and education emerged as another key priority. Participants stressed the importance of active community participation, climate awareness, skills enhancement, prioritising community-based adaptation interests, and recognising traditional knowledge as the foundation of adaptation interventions.

Chapter 7: The contribution of partnerships to community well-being: Insights from the university and communities

Chapter 7 answers the thesis on how current university-community partnerships contribute to community well-being. The chapter groups the contributions into two broad categories: (1) Structural support, which includes strengthening established local

government structures, enhancing social cohesion, and reigniting community interest; and (2) service provision contributions, which involve providing multiple adaptation options, establishing alternative pathways to agricultural extension services, offering economic livelihood opportunities, fostering coordination, and reigniting community interest in climate adaptation initiatives.

Chapter 8: Centring human development in university-community partnerships for climate adaptation in Malawi

Chapter 8 presents a framework for what a university-community partnership modelled on human development principles would look like. It serves as the theorisation chapter of the thesis, consolidating the findings from the three empirical chapters (Chapters 5, 6, and 7) and the theoretical framework (Chapter 3). The chapter proposes a human development-centred framework consisting of four components: equitable relationships, inclusive decision-making, optimal resource utilisation, and sustainable community well-being.

Chapter 9: Summary, reflections and conclusions

The concluding chapter provides a comprehensive summary of the various elements within the thesis and encapsulates the primary research findings about the research queries. Additionally, this chapter delves into the thesis's contribution to existing knowledge, acknowledges its constraints, and identifies potential directions for future research. Furthermore, it outlines policy and practical suggestions to enhance university-community partnerships' impact on community well-being in Malawi.

1.9 Summary

This introductory chapter has established the groundwork for this investigation by delineating the specific research problem, providing an overview of the research context, introducing the chosen research methodology, and offering a glimpse of the forthcoming chapters. This chapter has elucidated that the study examines university-community partnerships for climate change adaptation in Malawi, framed within the human development framework. The next chapter (Chapter 2) contains a comprehensive review of the pertinent literature, encompassing the roles of universities in addressing climate change, their contributions to SDGs, and their involvement in university-community

partnerships. Nevertheless, before delving into these chapters, it is imperative to provide precise definitions of key terms and concepts that will recurrently surface throughout this thesis.

1.10 Defining key terms and concepts

1.10.1 University-community partnerships

Refers to a collaborative relationship established between universities and surrounding communities to conduct joint research to generate knowledge that can be utilised for community development and empowerment (Drahota et al., 2016). While several approaches and strategies for implementing university-community engagement partnerships exist, university-community partnerships in this study are conceptualised in terms of internships, academic service projects, applied research, organisation and community capacity building, and collaborations through grants.

1.10.2 Climate change adaptation

This means that individuals and systems can adapt their actions in response to climate changes. When they make these adjustments to align with the current climate conditions, there are various changes in behavior, practices, structures, and processes (IPCC, 2007)

1.10.3 Well-being

Well-being is the ultimate end of development. It is about how an individual can function – or what they can achieve in being and doing (Boni & Walker, 2016). It is reaching the desired standard of living, an achieved outcome of development.

1.10.4 Bounded agency

Bounded agency refers to the intricate relationship between an individual's motivation and the social and territorial structures surrounding them when participating in learning activities (Evans, 2007).

1.10.5 Human development

The human development paradigm was developed to counter traditional economic-based approaches that mainly view wellbeing in terms of economic progression. In developing this paradigm, ul Haq (2003) championed the view that development must be "people-

centred" and focus on expanding the richness of human life aside from the richness of the economy (Stewart, 2019; Ul Haq, 2003). The first Human Development Report in 1990 defines human development as ‘both the process of widening people’s choices and the level of their achieved wellbeing’ (United Nations Development Program, 1990: 9).

Chapter 2：Literature review

2.1 Introduction

This chapter presents a comprehensive review of the literature relevant to the thesis, organised into four main sections. The first section provides a general overview of climate change and emphasises the importance of developing countries' engagement with this issue. The second section focuses on the role of universities in climate change adaptation, while the third section explores the relationship between universities, climate change, and sustainable development. Specifically, this section highlights the interconnection between climate change and the 2030 Agenda for Sustainable Development and discusses universities' role in achieving the SDGs. The fourth section examines the role of universities in university-community partnerships, emphasising the need to explore such partnerships in Malawi from a human development perspective. Finally, the chapter concludes by summarising the key findings.

2.2 Overview of climate change discourses

2.2.1 Understanding climate change

Amid a number of definitions of climate change, three main ones have been identified. The first defines climate change as an increase in temperatures linked to industrial activities and the greenhouse effect (Henderson et al., 2017); Anderson (2012) and Dyer and Andrews (2011). This definition implies that Industrial activities, such as the burning of fossil fuels and deforestation, release greenhouse gases (GHG) into the atmosphere. These gases trap heat from the sun, leading to a warming of the Earth's surface and changes in climate patterns.

The second body of literature defines climate change in terms of statistical properties of the climate system observed over a long period, regardless of the cause (Houghton, 2001). Houghton's definition aligns climate change with long-term scientific observation of the physical nature of the earth's system. However, it does not focus on the specific causes of the changes observed but rather on the changes themselves. The statistical properties of the climate system that are analysed may include temperature, precipitation, sea level, and other variables that are indicative of climate patterns. By analysing these

statistical properties, scientists can identify trends and patterns in the climate system that may indicate a changing climate. This definition is important because it allows scientists to track and understand changes in the climate system over time, which can inform policy decisions and help mitigate the impacts of climate change.

The third body of literature defines climate change as changes in the earth's climate attributable to human beings in the contemporary era, involving an overall increase in temperatures and other environmental effects (McCowan 2020; Berners-Lee (2019). This definition, specifically of humanity being the driving agent of changes in the earth's climate system, is in line with the official definition by the United Nations Framework Convention on Climate Change (UNFCCC) and the Intergovernmental Panel on Climate Change's (IPCC's) conceptualisation of climate change. Both IPCC and UNFCCC bring to the fold humanity as the main driver of climate change aside from natural forces. The IPCC defines climate change as a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties that persist for an extended period, typically decades or longer, and this can be any change, whether natural change or as a result of human activity. The UNFCCC defines climate change as the change in the climate system which is attributed directly or indirectly to human activities that alter the composition of the global atmosphere and which are in addition to natural climate variability observed over the comparable period.

One of the gaps in understanding climate change is that it has always been understood from a natural science perspective. This shows that previously, climate change was often perceived as a natural uncontrollable phenomenon. However, the science-centred understanding of climate change fails to embrace the thinking that humanity is at the centre of changes in our climate system. According to Murshed et al. (2022), human activities are currently considered the primary cause of climate change. This thinking explains why some (Leal Filho et al., 2021; Leichenko and O'Brien, 2020; Hindley and Wall, 2018) point out critically that climate understanding is largely viewed from a narrow perspective, with scientific literacy focusing mostly on the physical processes, rising emissions, and scientific evidence of global natural changes. The authors further argue that it is not surprising that climate education is less people-centred and follows the

business-as-usual pattern where interventions such as reducing emissions are prioritised (Hindley & Wall, 2018). As a result, people are denied space to recognise and acknowledge the issue's social, psychological, and emotional dimensions and often fail to see openings, capabilities, and entry points for active engagement on the subject (Leichenko & O'Brien, 2020). It is for this reason that this study adopts a human development perspective of climate change because of its expansive view of recognising that humans are at the centre of the changes in our climate system. Thus, by understanding the social, psychological, and emotional dimensions of climate change, people can better recognise the need for action and identify opportunities for engagement.

2.2.2 The current state of climate change

The IPCC Assessment Report 6 (AR6) Synthesis Report, released in March 2023, confirms that human activities, particularly causing GHG emissions, have caused global warming, resulting in a rise of the global surface temperature to 1.1°C above 1850–1900 during 2011–2020. The report warns that if GHG emissions continue, global warming will increase, with the best estimate being a rise of 1.5°C in the near term, according to considered scenarios and modelled pathways. This highlights the urgent need for climate adaptation and mitigation measures, particularly in countries with weaker adaptation systems. UN Secretary-General Antonio Guterres emphasised that the then upcoming United Nations Climate Change Conference in Glasgow (COP26) provided an opportunity for member countries to commit to achieving net zero emissions by 2050. He also stressed the importance of reinforcing climate financing to developing countries to support local communities, build resilience, and adapt to climate threats. While progress has been made in adaptation planning and implementation across all sectors and regions, the report notes that adaptation gaps still exist and will continue to grow if current rates of implementation are maintained. Given the urgency of the situation, universities have potentially a vital role to play in supporting climate response through their functions of teaching, research and community engagement.

2.2.3 Why developing countries must care about climate change

Developing countries report greater economic vulnerability due to heavy reliance on natural resources for economic gains and a weak capacity to adapt to the impacts of

climate change (IPCC, 2014). For most developing countries, climate variations in temperature and rainfall patterns, water supply and quality present dire consequences for food production, which accounts for the main livelihood source for developing countries (IPCC, 2021). South Asia for instance, is highly vulnerable to climate shocks due to high levels of poverty, weak governance systems and susceptibility to weather extremes (Leah Filho et al., 2019). Equally, Davis et al. (2019) reported that India has had a fair share of climate shocks due to rising temperatures, affecting agricultural yields. Beyond the direct impacts of climate change on the economy, climate change impacts also lead to unemployment, food insecurity and the skyrocketing prices of commodities (IPCC, 2014).

The African continent is regarded as one most vulnerable to the impact of climate change (Anderson, 2012; Bie et al., 2008). According to the latest decadal predictions covering 2020 to 2024, Africa is expected to experience ongoing warming and a decrease in rainfall, particularly in North and Southern Africa, while the Sahel region may see an increase in rainfall (IPCC, 2021). Furthermore, the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report indicates that areas of Africa are projected to exceed a 2°C warming above pre-industrial levels by the last two decades of this century under medium scenarios. Additionally, the report suggests a likely reduction in precipitation over North Africa and the southwestern parts of South Africa by the end of the century. The United Nations International Strategy for Disaster Risk Reduction (2018) (ISDR) further reports that drought will continue to be a primary concern for many African populations. The frequency of weather- and climate-related disasters has increased since the 1970s, and the Sahel and Southern Africa have become drier during the twentieth century. However, it is important to recognise that Africa, despite contributing relatively less to global GHG emissions, is disproportionately affected by the consequences of climate change. Much as the reasons vary, scholars agree that poverty, overdependence on natural resources, recurrent natural disasters, conflicts and poor governance are some key challenges exacerbating the negative impacts of climate challenges (Leah Filho, 2019; Mohamedhai, 2010; Padgham et al., 2009). The current climate projections are predicted to become more variable, and extreme weather events are expected to be more frequent and severe, with increasing risk to health and life (Christensen et al., 2007). Climate change is a critical issue that poses significant threats to the economies and

livelihoods of countries, particularly those in the developing world, such as Malawi. The country's economy is heavily reliant on agriculture (GoM, 2021; UNDP, 2019), which is vulnerable to climate shocks, making it more susceptible to the adverse impacts of climate change. This situation is further compounded by poverty, poor governance, and other challenges that hinder communities' ability to adapt to the changing climate.

Based on the above discussion, the need for developing countries to prioritise climate action and take measures to mitigate and adapt to the impacts of climate change is crucial. The following section will discuss some general responses to climate change that governments, organisations, and individuals can adopt to address this global challenge.

2.2.4 General responses to climate change

2.2.4.1 Mitigation

Mitigation focuses on reducing climate change effects, while adaptation foregrounds reducing vulnerability to climate effects (Morad & Harry, 2013). In other words, mitigation addresses the causes of climate change, while adaptation deals with the impacts of climate change (Alves et al., 2020, p. 19). Chishakwe, Murray and Chambwera (2012) define climate change mitigation as efforts to limit or minimise GHG emissions into the atmosphere to prevent planetary warming. Such efforts are mostly at the policy level, where agreements and interventions aim to reduce GHG concentrations (Anderson, 2012). An important example of efforts to reduce the impact of climate change is the 21st Conference of the Parties to the UNFCCC (COP21) in Paris on December 12, 2015. During this conference, participating countries signed an agreement aiming to limit the increase in global temperatures to well below 2°C, with a target of 1.5°C (Segger, 2016). While the importance of mitigation is recognised, it is primarily driven by the Global North, which is responsible for 22% of worldwide CO2 emissions and has higher levels of GHG emissions than African countries, whose combined contribution is only 3% (Ritchie, et al 2020). Furthermore, the Global North still has significantly higher per capita emissions compared to most of the world, even at present (Ritchie et al., 2020). Overall, while the COP21 agreement was a significant step forward in mitigating the impact of climate change, it is clear that more needs to be done to ensure that all countries are equally committed to reducing emissions.

2.2.4.2 Adaptation

Climate change adaptation refers to efforts intended to prepare communities for, and to respond to, actual or expected impacts of climate change (UNFCCC, 2011). The IPCC defines adaptation as an adjustment in natural or human systems to a new or changing environment. This entails that individuals and/or systems can modify their actions in response to anticipated or real climate variability and its consequences. Once these adjustments are made to align with the current climate conditions, there are numerous alterations in practices, structures, and processes (IPCC, 2007). This definition cements the argument that adaptation focuses on reducing the effects or impact of the climate threat. Orlove (2019) claims that adaptation has gained more prominence in the last decades due to the failure of nations to mitigate climate change, paving the way for actions aimed at reducing harm as a viable option.

This study primarily focuses on climate adaptation, although it recognises the importance of both mitigation and adaptation efforts. The reason for this emphasis is that Malawi, classified as a least developed country in sub-Saharan Africa, has relatively low contributions to global GHG emissions, which are the leading cause of climate change (GoM, 2016). It is worth noting that while many countries in sub-Saharan Africa have prioritised adaptation over mitigation, this does not imply a lack of agency in Africa. Instead, it highlights the significance of developing locally-driven solutions to address the global discourse on climate change response.

2.2.5. Climate adaptation efforts in Africa

As previously discussed, there is a strong argument for prioritising adaptation efforts in Africa based on the current level of vulnerability and the potential impact of climate change (Zulu, 2016; Adger 2009; Henderson-Sellers, 1996). Developing countries, in particular, tend to rely heavily on climate-sensitive resources and may have lower adaptive capacities compared to industrialised nations (Hernes et al., 1995; Schelling, 1992). In terms of policy, the African continent's Agenda 2063, finalised in 2013, recognises that climate change presents a significant challenge to the region's development. To demonstrate their commitment to addressing climate change, 52 African countries have submitted their initial Nationally Determined Contributions (NDCs) to the Paris Agreement (UNFCCC, 2020). Additionally, the Least Developed Countries (LDCs)

worldwide have developed the National Adaptation Programme of Action (NAPA), a plan submitted to the UNFCCC by the LDCs. This plan outlines a nation's perception of its most urgent and immediate adaptation needs and establishes a process for identifying priority activities to address those neds (GoM 2008). In Malawi's case, the NAPA was developed in 2006 to address the country's urgent and immediate adaptation needs resulting from climate change and extreme weather events. Some of the key priority areas for adaptation in Malawi include:

a. Sustaining life and livelihoods for the most vulnerable communities.
b. Enhancing food security and developing community-based storage systems for seed and food.
c. Improving crop production through the use of appropriate technologies.
d. Increasing resilience of food production systems to erratic rains by promoting sustainable dimba production of maize and vegetables in dambos, wetlands and along river valleys.
e. Targeting afforestation and re-afforestation programmes to control siltation and the provision of fuel wood, and for their benefits, such as sources of alternative cash income.

Despite the prioritisation of specific projects, their implementation has been hindered by insufficient funding. Although the NAPA acknowledges the involvement of universities in climate change adaptation, it does not explicitly recognise their importance in the climate adaptation response, apart from including them in the consultative process for strategy development. Nonetheless, there is growing recognition of universities' role in global efforts to address climate change vulnerabilities. In the following section, we will explore the intersection between universities and development.

2.3 Climate change and the role of universities

This section provides a literature review of the role of universities in climate change adaptation and further reflects on the barriers that universities face in advancing climate adaptation initiatives.

2.3.1 Role of universities regarding climate change adaptation

As part of responding to climate change, the IPCC (2018) supports member countries to invest in education, information, and community approaches, including those informed by indigenous knowledge and local knowledge, to limit global warming to 1.5°C. Universities play a crucial role in shaping the future of our communities (Leal Filho et al., 2023). By supporting community approaches, they can have a positive impact on society and shape more sustainable societies (Leal Filho et al., 2023, 2022; Hsieh & Lee, 2021; Khayyam et al., 2021). Universities have access to resources, knowledge, and expertise that can help solve community problems and create meaningful change. For example, universities can leverage their influence to address the causes and impacts of climate change by offering training and capacity building, conducting awareness campaigns, and providing advice to communities and policymakers (Leal Filho et al., 2023). Despite this call, the contribution of institutions of higher learning, particularly universities, to supporting community approaches have not been fully explored, hence the need to understand the forms of influence of universities on society (McCowan, 2020; Leah Filho, 2019). As noted by Mc Cowan (2020), while much climate science takes place outside universities – in specialised institutes or state bodies such as the National Aeronautics and Space Administration (NASA) and the Meteorological Offices – universities are still the pre-eminent locus for generation, communication, and validation of knowledge on the issue.

Universities are crucial in addressing climate change through research, teaching, and community engagement (Andrew, 2012). In terms of research, Stern et al., (2016) argue that universities can prepare communities to adapt to the impacts of climate change by providing research on sustainable adaptation options. This can be achieved by integrating community views into solutions and serving as hubs for inventing, testing, and disseminating climate adaptation knowledge in local communities (Wu & Lee, 2015; Dyer & Andrews, 2011). Universities can also participate in co-production efforts with neighbouring communities to support local adaptation and mitigation initiatives (Hsieh & Lee, 2021; Khayyam et al., 2021). In addition, universities are responsible for teaching students about climate change and reviewing curricula to ensure that climate education is integrated into all development disciplines and that graduates are prepared for the impact of climate change on the workforce (Feinstein & Mach, 2019; IPCC, 2014;

Ramaley, 2014). For this to be achieved, universities need more radical changes to their curriculums and practices, including management and engagement with the local community, to adequately meet students' needs now and in the future (Lotz-Sisitka, 2014). As such, teaching and curriculum review should go beyond imparting knowledge to engaging community views in addressing societal challenges (Mohamedbhai, 2010).

Universities are tasked to lead community engagement as a key role in supporting climate change adaptation. Through partnerships with communities, universities are well-positioned to prepare graduates for adaptation work, engage in local research for mutual learning, and partner with communities for better animation of climate action (McCowan, 2020b; Dyer & Andrews, 2011). The concept of collaborating with communities is based on the belief that engaging in a two-way process promotes the inclusion of community knowledge into university practices, facilitates knowledge sharing, and enables mutual learning and reciprocity (Mtawa et al., 2015; Weerts & Sandmann, 2008). In the United States, some universities have signed the 2006 American College and University Presidents Climate Commitment (ACUPCC), which aims to lead efforts towards climate neutrality by implementing innovative solutions that reduce GHG emissions (White, 2009). These initiatives are examples of universities partnering with communities to address climate change. Similarly, the 1990 Talloires Declaration in France ensured that more than 500 university leaders from more than 50 countries committed to environmental sustainability teaching, research, operations and community responsibilities.

While Africa is regarded as one of the continent's most vulnerable to the impacts of climate change (Anderson, 2012; Adger et al., 2003; Bie et al, 2008), African universities' potential to contribute to response efforts has not been explored to the extent that it has been elsewhere. The applied efforts are not robust and similar across the globe (Leal Filho et al., 2019). While some experts acknowledge that African universities are not fully utilizing their potential to address climate change, there have been successful initiatives in this area. For instance, the four-day forum titled "Education, Capacity Building, and Climate Change: a Strategy for Collective Action in Africa" organized by the International START Secretariat in Salaam in June 2010 is a notable example. During this forum,

participants identified various areas for short- and long-term actions to enhance curriculum development. Additionally, the Programme for Climate Change Capacity Development (PCCCD), established by the Southern African Universities Association (SARUA) and its member universities in 2010, directly addresses the impacts of climate change in southern Africa. However, there is limited scholarship on community engagement on climate change as compared to teaching and research aimed at improving climate change responses (Andrew, 2012). Yet Stern, Sovacool and Dietz (2016) argue that universities have a critical role in preparing communities to adapt to the impacts of climate disruptions by providing research on sustainable local-based adaptation options. Therefore, universities can serve as hubs in their local communities as the medium for inventing, testing and disseminating climate adaptation knowledge (Wu & Lee, 2015). Through partnerships with local communities, African universities could prepare graduates for adaptation work and engagement in research for mutual learning and better animation of climate action (Ssekamatte, 2020).

A continued debate about African universities is around the need for more localised research on climate adaptation (McCowan, 2020; Dyer & Andrews, 2011). For example, Corbera et al. (2006) claim that African universities must advance local-based research instead of replicating Western solutions. However, few studies have been conducted on how African universities can partner with local communities to address climate change issues. For example, Leah Filho (2023) study has focused on mapping how university community partnerships can partner in the delivery of SDGs and further calls for the need for operational principles and strategies to ensure that the partnership is productive and manageable. Writing in the article “How universities could help whole communities tackle climate change”, Adefila (2023) highlighted the need for universities to do more to build connections with their communities by involving the local community in their day-to-day practice of teaching and research. However, a study examining the state of research on climate adaptation and mitigation by Baninla et al. (2020) revealed that most African studies on climate adaptation are conducted by South African universities. Still, other studies beyond South Africa, such as Okon et al. (2021), recommended the coordination, investment in, and timely revision and adequate monitoring of adaptation/mitigation strategies across the various adaptation categories in Nigeria. Abegunde et al. (2019)

reviewed the literature on climate-smart agriculture (CSA) in sub-Saharan Africa and its potential to address food insecurity in the face of climate change. The authors identify factors influencing CSA adoption, such as age, farm size, and access to extension services, and discuss challenges to scaling up CSA, such as financing bottlenecks and uncertainties around which practices should be considered CSA. In the context of Malawi, Murray et al., (2016) explored the adoption of Climate-Smart Agricultural (CSA) practices and technologies to facilitate adaptation and improve livelihoods for women smallholders. They recommended the need for gender analysis of CSA practices and ways to enhance labour productivity among women smallholders. Mkomwa et al. (2013) found that local communities are able to recognise changes in their climate and environment, such as delayed and unpredictable rainfall and warming temperatures, but emphasise the importance of integrating indigenous knowledge systems into programmes addressing climate change adaptation to ensure sustainable and relevant strategies. Mataya et al. (2020), examined the effectiveness of capacity-building efforts for climate change adaptation in Malawi and identified challenges that impede effective capacity-building, such as the inadequacy of training needs assessments and the organisational structure in which trainees attempt to put their skills and knowledge into practice. However, there is a dearth of knowledge on how universities, through university-community partnerships, can enhance vulnerable communities' ability to adapt to climate threats. This study intends to fill this gap in the emerging literature by exploring university-community partnerships and how they engage with communities in the context of Malawi.

2.3.2 Barriers to the role of universities in climate adaptation

The advancement of universities' involvement in climate adaptation faces various obstacles, with weak leadership and weak institutional cultures at the university level being prominent challenges. Effective leadership is crucial in establishing a culture of social change within universities that prioritise climate action (Leal Filho et al., 2021; Purcell, 2019). For instance, Mutinda and Zhimin Liu (2021) conducted a case study of two universities, in South Africa and Egypt, and concluded that many universities do not have adequate funding, staff, or infrastructure to support climate change research and education, limiting their ability to develop innovative solutions and engage in meaningful collaborations with external partners. A study by Baninla et al. (2016) on selected sub-

Saharan universities' capacity to deal with climate change found that universities in developing countries face significant resource constraints that hinder their ability to do this. The authors argue that there is a need for increased funding and support from governments and international organisations to address this issue. To successfully drive change, it is necessary to involve all levels of the organisation, adopt a cross-cutting agenda, implement new measures of impact and accountability, and consider incentives and strategies (Torkzadeh & Mohtaram, 2022). One of the main challenges is the lack of integration of climate change into their academic programmes and research activities despite the growing awareness of its significance, limiting the ability of students and researchers to gain a comprehensive understanding of climate change or to develop effective solutions. Leal Filho et al. (2019) highlight the need for universities to integrate climate change into their curricula and research agenda and provide training and capacity building for faculty and staff.

Universities, especially in Africa, face challenges related to governance and institutional culture, with complex bureaucratic structures that can hinder collaboration and innovation and conflicting priorities or interests that impede their ability to respond effectively to climate change. Wamsler et al. (2018) argue that universities need to develop more flexible and adaptive governance structures that facilitate collaboration and innovation and foster a culture of sustainability that prioritises environmental stewardship and social responsibility. Moreover, universities face community engagement and partnership challenges, with difficulties in engaging effectively with local communities and external partners. This limits their ability to develop context-specific solutions and achieve meaningful impact. Lang et al. (2018) and Clegg and McNulty (2002) suggest universities adopt a more inclusive and participatory approach to community engagement, building trust, establishing shared goals, and co-creating knowledge and solutions with local communities. Given the potential role of university partnerships in supporting climate adaptation, the question remains crucial in situations where communities' views of the partnerships are undocumented. Malawi is an example of this, where the focus has been on teaching and research while literature on communities' perspectives on climate adaptation is limited.

2.4 Climate change, universities and sustainable development

Overwhelming evidence suggests that climate change has a negative impact on economic systems, contributes to rising global inequalities and, in most cases, affects general livelihoods (McCowan, 2020; UNFCCC, 2013). On the other hand, universities can provide a vehicle for sustainability by facilitating the concept of sustainability in both the present and future global climate (Leal Filho et al., 2023; Dyer & Andrews, 2011). The nexus between climate change, universities and SD is closely intertwined. The recurrent episodes of human-induced climate change represent an opportunity for universities to develop a more established role in supporting a people-centred response mechanism that promotes environmental sustainability. As a strategy to address climate change, nations have established various agreements with the recent 2030 Agenda and the 17 SDGs termed a landmark sustainability global plan. Though Climate Action sits in SGD 13, scholars suggest that meaningful, SD and realisation of other SDGs such as no poverty and zero hunger rely heavily on Climate Action (SDG 13) (McCowan, 2021; Leah Filho, 2019). It is, therefore, not surprising that numerous studies have highlighted the interconnectedness between the commitments of the Paris Agreement and those of the 2030 Agenda, both normatively and empirically, within specific domains (Nerini, 2019). This growing body of evidence indicates that the impacts of climate change could make it more challenging to achieve specific development targets. For instance, climate change's effects on agricultural production could impede efforts to reduce poverty and hunger. To understand better such interconnectedness, the following section begins with an understanding of universities' roles in development and SD, followed by the nexus between climate change and SDGs. The last section discusses universities role in implementing the SDGs.

2.4.1 Situating the university's role in development

The issue of universities' contribution to national development has been widely debated in higher education research (McCowan, 2016; Peercy & Svenson, 2016; Mosha, 1986). The World Bank (2017) recognises that universities have the potential to make significant contributions to society by promoting the end of extreme poverty, enhancing human well-being, and increasing shared prosperity. Many people view universities as crucial in providing the knowledge necessary for development (Cloete & Maassen, 2015).

Transforming societies through partnerships has gained prominence over the years, with community engagement seen as a crucial aspect. Ernest Boyer (1990) introduced the idea of an engaged institution, which refers to an organisation closely connected to the public in which it operates. Boyer argued that universities are not merely located within communities but are active members of those communities. Mohale (2023) notes that universities in South Africa have been viewed as having a specific mission to engage with their communities, which is believed to enhance democratic values, promote shared citizenship, and contribute to the common good. According to Bhagwan (2017; 2019), community engagement is increasingly recognised as a means to transform pedagogy and create a more democratic and socially just higher education system that benefits the public.

Research has indicated that universities are responding to the call for transformation and increasing their engagement with external communities, despite teaching and research traditionally being viewed as the primary functions of universities (Bringle, 2007; Gyamera & Debrah, 2021; Khanyile, 2020; Molepo & Mudau, 2020; Bhagwan, 2019). However, studies show that community engagement remains a peripheral concern for universities compared to teaching and research tasks, and its credibility depends on framing it within a scholarship base in various university disciplines (Bhagwan, 2019; Molepo & Mudau, 2020; Preece, 2013). This is concerning since community engagement is critical for universities to make meaningful contributions to society and transform communities through education, research, and knowledge exchange. Bender (2008b, 83) has noted that community engagement and service are often problematically viewed as mere add-ons or philanthropic activities. This suggests that the potential for universities' community engagement mission to contribute to development is hindered by significant resistance to acknowledging and advancing it as a core function of the university. This lack of prioritisation could prevent universities from effectively addressing emerging challenges such as climate change faced by communities, leading to a lack of responsiveness to community needs and a breakdown of trust between universities and their communities. However, recognising and acknowledging the community engagement role is not enough; partnership interventions must also consider community perspectives to be effective. Rieckmann et al. (2021) caution that for university-community partnerships to develop to

their full potential, they must be designed to allow for effective participation from all involved parties. Partnerships between universities and communities remain crucial, particularly in contexts like Malawi where climate change has had a major impact on rural communities due to factors such as rain-fed agriculture, population growth, deforestation, and soil erosion (GoM, 2021). Despite this vulnerability, little emphasis has been placed on the functionality of university-community partnerships as a pathway for advancing climate adaptation initiatives for local communities. Given the potential for universities to contribute to societal development through community engagement and knowledge exchange, it is important to understand the nexus between universities and SD in the context of emerging challenges such as climate change.

2.4.2 Understanding sustainable development

The concept of sustainable development (SD) is a popular catchphrase in contemporary development discourse focusing on the relationship between human beings and the immediate environment (Mensah, 2019). Amid various conceptualisations, the most widely used definition of SD is drawn from the World Commission on Environment and Development (WCED, 1987), which defines sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own. While sustainable development and sustainability are often used interchangeably, the two terms differ (Axelsson et al., 2011). Sustainable development mostly denotes the entire process of attaining the desired goal or a means to an end, while sustainability is viewed as the end product or achievement of the process (UNESCO, 2017). The link between climate change and sustainability is clear, with Krause (2016) highlighting the similarities between the two concepts and concluding that addressing climate change is a crucial component of achieving sustainability. This connection is particularly relevant when considering the 2030 Agenda for Sustainable Development, which sets out a comprehensive blueprint for achieving a better and more sustainable future for all. The agenda recognises the impacts of climate change on sustainable development and includes a specific goal to take urgent action to combat climate change and its impacts (United Nations, 2015). Therefore, addressing climate change is not only necessary for adapting its effects but also for achieving the SDGs. In

the following section, I explore the relationship between climate change and the 2030 Agenda in more detail.

2.4.3 Climate change and 2030 Agenda for Sustainable Development

The concepts of climate change and SD are closely related. Swart, Robinson and Cohen (2003) try to link the two concepts in an attempt to argue for an integrated approach to attain environmental and economic sustainability. They (2003) provide evidence of the dependency of SD policies on environmental and economic policies while demonstrating that climate change policies aim to minimise damage to the environment and to economic gains. For instance, for sustainability to be achieved, climate change impacts must be measured through the lens of SD (Munasinque & Swart, 2005). Such analysis will help understand the causal relationship between climate change drivers and SD pathways to understand better how climate change ought to be mainstreamed in the broader development policies (Leal Filho et al., 2019). These linkages are further reinforced by the IPCC and UNFCCC bodies, which provide compelling evidence that climate change impacts can undermine SD. In contrast, SD can minimise vulnerability to climatic shocks (IPCC, 2014). Regarding policy support on climate change and SD, Setti and Azeiteiro (2019) argue that linkages between sustainability and climate change were strengthened during the 1992 United Nations Conference on Environment and Development, also known as the Earth Summit. The major outcome of the Earth Summit was the adoption of the comprehensive plan of action aimed at promoting SD and addressing environmental challenges globally, nationally, and locally by organisations Subsequent policy frameworks that reinforced linkages between climate change and SD include the adoption of the Biological Diversity Convention and the UNFCCC, UN summits in South Africa in 2002 (Rio+10) and Rio de Janeiro in 2012 (Rio+20) (Smith et al., 2019). The most recent historic agreement is the 2015 Agenda for Sustainable Development, which set objectives within a universal agreement signed by 193 UN member countries to balance economic progress and protection of the environment (Morton et al., 2019; Leah Filho et al., 2019). SDG 13 (Climate Action) places a strong emphasis on climate change, with a focus on enhancing resilience and adaptive capacity to climate-related hazards and natural disasters in all countries. The goal also aims to integrate climate change measures into national policies, strategies, and planning, as well as improve education,

awareness-raising, and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning (United Nations, 2015).

As a first global accord on climate change, the Paris Agreement proposes several stakeholder collaborations on climate action in its special report titled Global Warming of 1.5°C, which involves synergies with academia, research institutions and community stakeholders to foster climate adaptation and mitigation (IPCC, 2018). The report further elaborates on the need for transformative change by providing a historical trajectory of synergies between climate change and SD from the 1960s to 2020 as summarised in Figure 2.1 below:

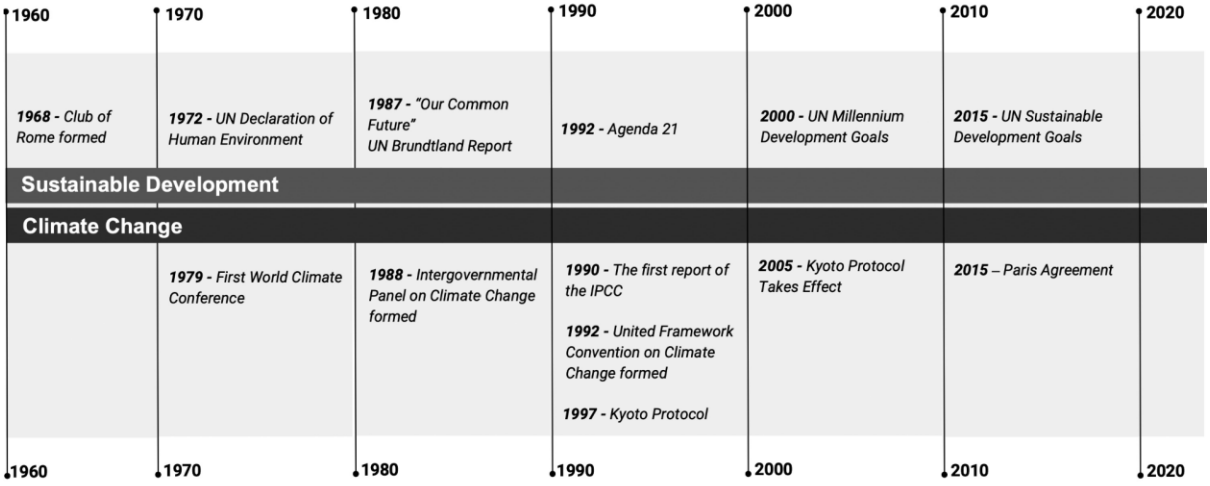

Figure 2-1 Timelines showing the main events of sustainable development and climate change (source: based on Peng et al. (2018) and Swart et al. (2003))

Figure 2.1 above shows that efforts to link climate change and SD began in the 1960s when selected representatives of countries formed the Club of Rome to discuss several issues, including imminent environmental disaster and the linkage to SD. In its report, *The Limits to Growth*, delegates concluded that the SD goal popularised by the World Commission on Environment and Development (1987) allows development and growth within the planet's carrying capacity (Thompson, 2001).

In the 1970s, the United Nations Stockholm Declaration (1972) placed environmental issues at the heart of SD, urging highly industrialised countries to dialogue on reducing pollution and emissions. Later, in 1979, the first World Climate Conference further

reinforced discussions on how climate-induced threats continue to affect the well-being of humanity (Koo, 2011).

The period between the 1980s saw the first establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations Environmental Programme (UNEP) and the World Meteorological Organisation (WMO). IPCC comprises a team of worldwide scientific experts that analyse scientific evidence on climate change and publish global reports. The first report was issued in 1990, and since then, findings have formed the basis for global climate change conventions by the UNFCCC, a body later established in 1992. The UNFCCC later adopted the Kyoto Protocol in 1997, setting targets for member countries to limit carbon emissions affecting well-being and SD (UNFCCC 1997).

The commitment to linking climate change and SD was further demonstrated in the 2000s when leaders of 189 countries signed the Millennium Declaration, pledging to achieve a set of eight measurable goals by 2015. Goal 7 of the Millennium Development Goals (MDGs), “ensure environmental sustainability”, called for action to protect the environment in the face of climate change impacts that threaten SD. The post-MDGs agenda led to the approval of the 2030 Agenda for Sustainable Development by the UN General Assembly, which includes 17 goals. The agenda reflects a commitment by member countries to protect the planet from degradation and take urgent action on climate change. Specifically, SDG Goal 13 aims to “take urgent action to combat climate change and its impacts”. The targets under Goal 13 focus on integrating climate change measures into national policies to ensure that all development strategies incorporate climate action.

The 2030 Agenda for Sustainable Development and its focus on climate action provide a crucial framework for addressing the challenges of climate change and realising SDGs. Given the significance of this agenda, universities have an essential role in its implementation. In the next section, I explore how universities can contribute to achieving SDGs through research, education, and community engagement.

2.4.4 Universities’ role in the implementation of sustainable development

As stipulated in SDG 4 (Quality education), the role of universities calls for inclusive, equitable and quality education (Ulmer & Wydra, 2020). However, McCowan (2020)

argues that the university contribution is much broader, encompassing all the SDGs. This suggests that through education functions, universities ought to integrate the vision of the SDGs and help to address the challenges set out by the 2030 Agenda for Sustainable Development. The United Nations further acknowledges the unique role of universities in implementing the SDGs. Bearing in mind that the framework of the SDGs focuses on the broader development discourse, the unique functions of education are essential components, suggesting universities as key contributors to achieving the goals.

Literature suggests disparities between Global North and Global South universities, suggesting that Global North universities are doing more in practice than universities in the Global South (Ulmer & Wydra, 2020). For instance, university environmental protection programmes in Bangladesh and Sub-Saharan Africa are less complex than in the Global North (Hoque et al., 2017). However, it must be noted that the variations could also be attributed to a lack of documented published research from the Global South countries (Ulmer & Wydra, 2020). However, the university's role in the implementation of the SDGs continues to gather global traction. In addition to their role as centres of learning, universities are also accountable for promoting sustainability. This is because they have played a part in facilitating the behaviours, ideologies, and technologies that have led to the current environmental crisis, according to Corcoran and Wals (2004). Leah Filho et al. (2019) argue that universities should support SD through knowledge dissemination, teaching and research. The knowledge transmitted by the university underpins the implementation of SDGs by addressing societal challenges affecting well-being. Such a role is transformative in nature as it combines nurturing social-cultural dimensions of societies, positioning them towards self-responsibility and stewardship of the environment (Sonnett et al., 2019). By engaging with the local communities, universities can also incorporate community views that would further inform national and regional SD planning (Peer & Penker, 2016).

Universities are uniquely positioned to combine theory and practice, a privileged position that can link local-based actions to national-level strategies (Leah Filho et al., 2019). For instance, universities can develop, assess, and monitor SDG policy options and implementation pathways through its research and outreach functions. Universities also

interface with several stakeholders, key to implementing the SDGs (Vargas et al., 2019). Through such platforms, stakeholders can influence the speed and pace of implementing the strategies, for instance, making funding available in areas where it is limited (Lozano & von Haartmann, 2018). For instance, in the UK, universities support stakeholders with crucial language to generate funding and institute governance structures (Vargas et al., 2019). In Latin America, universities support stakeholders in disseminating policy frameworks related to SD.

There are notable examples of African universities contributing towards implementing the SDGs, which are closely aligned with Africa Agenda 2063. For instance, Mathebula (2018) has a compelling study on engineering education for SD from South African and German engineering students. While she addresses the question of teaching for public good engineering, she raises critical insights on how universities contribute to SD by educating professional groups like engineers to be more aware of the consequences of development efforts, particularly those in which engineers are involved. Similarly, Kenyan universities have made significant contributions through education and training, research and publication, managerial operations, and community leadership (Kivaa & Maluki, 2021). This is evident from their strategic plans, syllabi for degree programmes, and community partnership initiatives. The University of Nairobi, for example, has implemented guidelines on revised curricula that require programmes to address the SDGs, Africa Vision 2063, and Kenya's Big Four development agenda (Kivaa & Maluki, 2021). In Mozambique, universities have developed appropriate teaching approaches to prioritise the SDGs (Husgafvel, 2017). A new module has also been developed for forest sector sustainability (Aalto University, 2017).

In Malawi, universities have incorporated education for SD in key sectors such as curriculum review and pedagogy (GUNI, 2019). Chiotha (2018) reports that universities have intensified efforts to train farmers and stakeholders on value addition (SDG 1), increase food productivity through community-based climate adaptation (SDG 13), empower women through gender-transformative approaches (SDG 5), and promote catchment afforestation through tree planting and regeneration (SDG 15). On the other hand, the LUANAR prospectus details how the university has redesigned its teaching and

pedagogy approaches to contribute to SD (LUANAR Prospectus, 2017). However, the emphasis on university-community partnerships as a pathway to contributing to SD is silent, which justifies the relevance of this research. Such examples provide a basis for universities in the Global North and Global South to take leadership in policy frameworks, dissemination, monitoring and generating funds for SD agenda.

While the university's contribution to the SDGs is commendable, Boni, Fogues, and Walker (2015) raise concerns about the targets associated with higher education in the SDGs. These concerns primarily revolve around the selection of indicators for measuring the achievement of the targets and the lack of focus on the quality of education. The authors argue that the quality of education should not be measured solely through enrolment numbers but should also consider important factors such as late entry into school, discrimination, and exclusions. To shape a model of a truly sustainable university, the authors propose a human development university (HDU), which is inspired by the work of Boni and Walker (2013, 2016) and Boni et al. (2016) and is based on the human development approach. This approach, which will be explained in Chapter 3, argues that development should not just be about economic growth but should prioritise human well-being as its ultimate goal (Ul Haq, 1995). The HDU focuses on expanding capabilities, promoting agency and participation, and considering sustainability in all aspects of university activities. This can be achieved through inclusive teaching, research addressing real-world challenges, social engagement, and governance and policies that prioritise equity, diversity, and sustainability. In the context of climate change adaptation, such an understanding of the university’s role in SD is critical to fostering effective partnerships with communities for building resilience.

In the next section, I explore the specific role of universities in university-community partnerships, as it is the focus of my study, and unpack how universities can leverage these partnerships to drive positive change and achieve sustainable community well-being.

2.5 University-community partnerships

2.5.1 Unpacking university-community partnerships

The concept of community partnerships lacks consensus and uniformity. According to Cooper and Orrell (2016), it involves the connection between universities and the community, promoting research and facilitating learning through teaching practice, community service, and public engagement. It falls within the broader spectrum of university-community engagement, which includes various levels of interaction such as service learning, community research projects, educational exchanges, and shared programmes (Mtawa et al., 2016; Russell & Flynn, 2001). Drahota et al. (2016) define university-community partnerships as collaborative relationships aimed at conducting joint research for community development and empowerment. It involves universities adopting a collaborative approach to knowledge exchange with the communities they serve. The Centre for Higher Education Transformation (CHET, 2003) describes these partnerships as collaborations characterised by knowledge sharing, co-learning, and mutual benefits for universities and communities. These features align with the context of Malawi and its approach to partnerships in climate change adaptation (GoM, 2021). Therefore, in this study, university-community partnerships refer to collaborative efforts that emphasise collaboration, mutuality, co-learning, and knowledge-sharing principles.

Having established the definition and general overview of university-community partnerships, the next section will delve into the brief origin and purpose.

2.5.2 Brief history and purpose of university-community partnerships

Higher education institutions, particularly universities and communities, have a long history of collaborative partnerships for academic, economic and social benefits (Bhagwan, 2018; Strier, 2011; Brukardt et al. 2004). The origin of university-community partnerships can be traced back to the 1980s, following a paradigm shift that empowered higher education institutions and organisations to lead the end poverty agenda (Boyle & Silver, 2005). A key output from these deliberations was grounded on engaging communities in solving developmental challenges (Boyle & Silver, 2005; Barnes et al., 2009). The partnership was seen as expanding teaching and research to involve communities in solving societal challenges (Ogunsanya & Govender, 2019; Janes, 2015; Baker-Boosamra et al. (2006). It was rooted in creating a dynamic mutual space for

primary research and testing new technologies to respond to real-world issues (Boyer, 1990; Brown-Luthango, 2013; Huxham & Vangen, 2000). In Boyer's (1990) conceptualisation of university-community engagement, he envisages academic researchers as a community of scholars that must partner with communities to promote societal well-being (Renwick et al., 2020; Ogunsanya & Govender, 2019; Boyer, 1990). The central argument is that universities form part of the community and can no longer disregard the community's role as the two operate within the same spectrum and must co-support the operations of the other. The synergetic relationship between universities and communities represents a paradigm shift towards engaged scholarship for mutual benefits (Strier, 2011).

Although the relevance of university-community partnerships is acknowledged, critics have raised concerns about the mode of engagement, its scope, and the levels of commitment (Russell & Flynn, 2001; Gronksi & Piggy, 2000; Huxham & Vangen, 2000). The observation above suggests that there may be issues with how these partnerships are being implemented and sustained, as well as with the depth of their impact on the community. There is also a debate on defining what constitutes a community and understanding the driving forces behind establishing, operationalising, and managing the partnership (Strier, 2011; Andriopoulos & Lewis, 2009). To address these challenges, Brown-Luthango (2013) and Arches and Aponte-Pares (2005) agree that the primary objective of university-community partnerships should prioritise people's well-being and ensure their full and active participation throughout the process. Boyer (1990) adds that partnerships must promote a scholarship of engagement, where universities introduce meaningful programmes that address social, economic, and developmental challenges beyond using communities as research entities.

In the context of climate change response, university-community partnerships to develop local-based capacities for effective climate adaptation are not new. The advent of climate change pushed universities to step up collaborative efforts with communities to promote positive, solutions-driven approaches to combat climate change (UNFCCC 2021). For instance, Buys and Bursnall (2007) argued that universities formed partnerships with communities to create new opportunities for improving agricultural productivity in water stressed areas. According to Rieckmann et al. (2021), *a* Delphi study funded by the

European project TERRIFICA on co-creation processes and climate change created and demonstrated a model of how university-community partnerships for climate adaptation can be structured and designed to ensure the full involvement of all stakeholders and positive contributions to climate change adaptation. Further, Anderson (2013), in a UNESCO Special Section on the ESD Response to the Three Rio Conventions, found that educational interventions are most effective when they concentrate on and incorporate local communities.

The examples above demonstrate university-community partnerships' potential for climate change adaptation. In the following section, we will discuss various models of university-community partnerships that have been successful in addressing climate change challenges. While the examples mentioned above demonstrate the potential of university-community partnerships for climate change adaptation, it is essential to note that these models do not specifically address university-community partnerships for climate change adaptation. However, they provide a foundation on which such partnerships can be based. In the following section, the study discusses various models of university-community partnerships that can be used in addressing climate change challenges.

2.5.3 University-community partnership models

To better understand the opportunities for partnership and the important roles that universities can play in supporting local and regional level adaptation efforts, it is helpful to have a basic framework of some of the existing university community partnership models. Models form a basis for understanding a concept's structural and functional patterns. Bender (2008) summarises university-community partnership models into three, as discussed below:

a. The silo model recognises the three roles of universities: teaching and learning, research, and community outreach, but it treats each role independently of the others. This approach views community engagement as working in isolation from the other roles and treats academics as mere volunteers to help with societal operations (Burton, 1998). In this model, community partnership is seen as "service" rather than engagement, where service involves students and staff

volunteering in community health disciplines. The silo model is similar to Goddard et al.'s (2016) traditional un-civic university model, both of which have been criticised and discredited. Boyer (1990) argues that meaningful university-community partnerships require university and community roles to operate within the same spectrum and to co-support each other. However, the silo model creates disparities between local communities and academics and falls short of human development approach tenets advocating for people-centred development initiatives fused within equity, sustainability, efficiency, active participation, and involvement of local people (Ul Haq, 2003). Additionally, the model treats local people as the ends of the process and academics as the means to the process (Brown-Luthango, 2013). Therefore, according to Ogunsanya and Govender (2019), the silo model undermines the basic fundamentals of university-community partnerships. Figure 2.2 below illustrates the silo model:

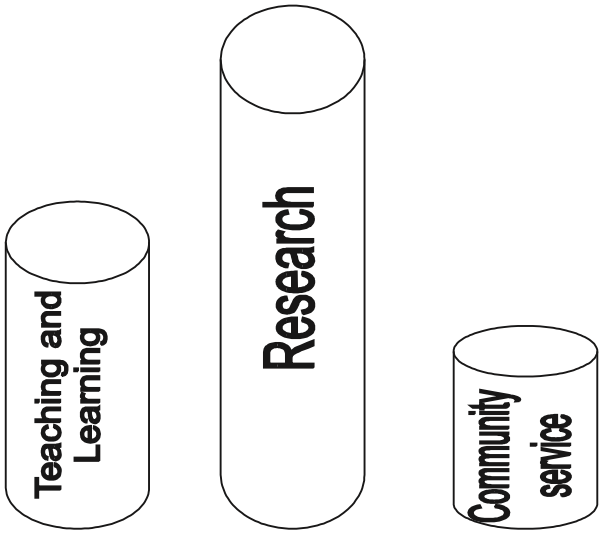

Figure 2-2 : The Silo model university community partnerships (adapted from Bender, 2008)

b. The intersecting model recognises that university and community activities closely intersect in operations. According to Bender (2008), while acknowledging the three roles of teaching and learning, research, and community outreach, this model suggests intersections and connectedness between these roles. In practice, the approach acknowledges that service learning and community-based research

manifest in the points of intersections. This model postulates that research and teaching depend on community outreach and that community partnerships provide insights into teaching and research roles. This thinking aligns with Boyer's (1990) conceptualisation of a university-community partnership, where academic researchers are a community of scholars who must partner with communities to promote societal well-being. The model assumes that universities are always and already engaging in various portfolios by nature of being housed in communities. However, the model fails to recognise that the degree to which social responsibility in partnerships is consciously perceived and actively nurtured varies (Gibbons, 2006). Bender further illustrates the model in Figure 2 below:

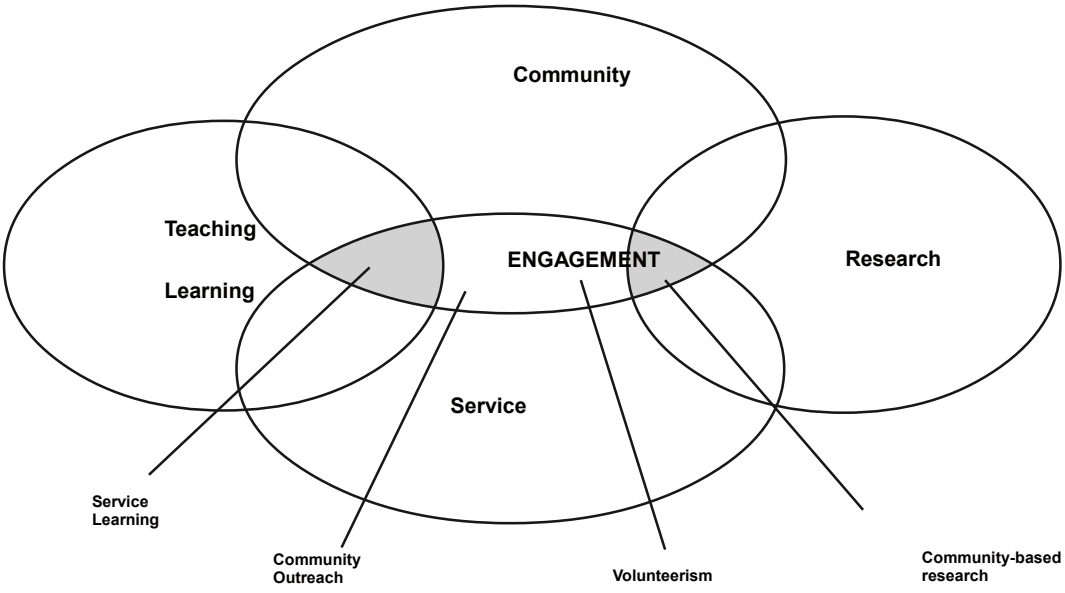

Figure 2-3 The Intersecting model of university-community partnerships

c. The infusion (cross-cutting) model proposes that university-community partnerships should be integrated within all activities of universities, but with more explicit emphasis than the intersecting approach (Bender, 2008). In this model, community engagement enriches teaching and research, and universities are expected to pursue the interests of communities through collaboration and mutual relations. According to Burkhardt et al. (2004), partnerships serve as the currency of engagement, facilitating exchanges and measuring an institution’s commitment to collaborative work with communities. Also known as a community-engaged

university, this approach considers community partnerships as the central focus of university functions, advocating for their inclusion in teaching, learning, and research (Bender, 2008). Unlike other approaches, the infusion model is people-centred and regards communities as both means and ends to the functions of the university. This model challenges universities to prepare students for civic engagement and social responsibility rather than solely focusing on employment. Hence, the model aligns with Renwick, Selkrig, & Manathunga's (2020) assertion that societal well-being should be at the core of the university-community partnership. Bender (2008) illustrates the model below:

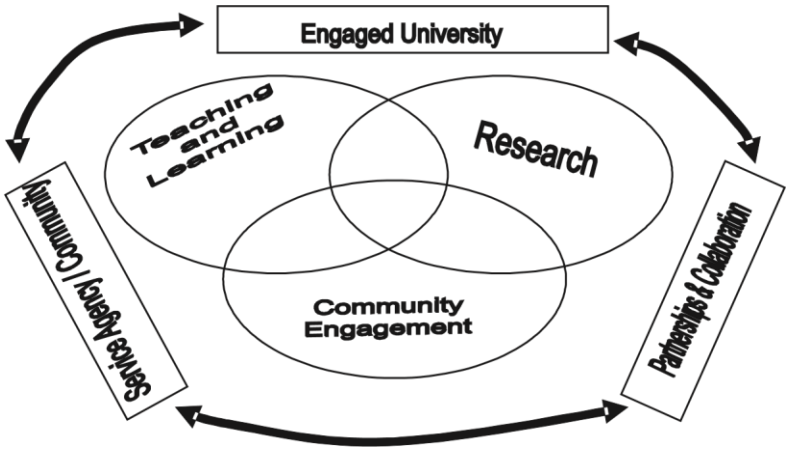

Figure 2-4 The Infusion (cross-cutting) model of university-community partnerships (adapted from Bender, 2008)

2.5.4 Aligning the infusion model to the human development approach

Among the three models of university-community partnerships, the infusion (cross-cutting) model has the potential to have the most equal power dynamics. This model emphasises collaboration and mutual relations with communities, viewing them as both means and ends to the functions of the university. It challenges universities to prioritise community interests and prepare students for civic engagement and social responsibility. The infusion model of university-community partnerships, which places people at the centre and regards communities as both means and ends to the functions of the university, is closely linked to the human development approach. Both models prioritise human well-being and emphasise the importance of expanding capabilities, promoting agency and participation, and considering sustainability in all aspects of university activities. The infusion model recognises the value of community knowledge and

expertise and seeks to integrate these into research, teaching, and service activities. Similarly, the human development approach emphasises the importance of valuing local knowledge and empowering individuals and communities to participate in decision-making processes. Both models recognise the importance of equity, diversity, and inclusivity in achieving sustainable development outcomes. Due to its interconnectedness to the human development approach, the infusion model adds value by providing a framework to understand such partnerships' structural and functional patterns. By considering this model, the study can identify potential areas for improvement and recommend strategies to enhance collaboration, equity, and community empowerment in addressing climate change adaptation challenges and sustainability.

Understanding the different models of university-community partnerships and their implications is crucial for universities seeking to engage with communities effectively. However, it is equally important for universities to have practical guidelines to help them navigate the complexities of community engagement. In the next section, I will discuss some practical guidelines universities can use to engage with communities. While these guidelines are based on best practices and lessons learned from previous university-community partnerships, they can offer insights into how universities can engage with communities in the Malawian context.

2.5.5 Practical guidelines for universities in engaging communities

Communities are mostly built around social and cultural components, which play a greater role in defining their behaviour (Bester, 2007). Therefore, partnering with communities for development projects entails that universities must understand the intricacy of community life, culture and traditions, information management and critical motivation factors for communities' interest in the proposed project (Norris (2001). For instance, Bester's Africa-focused research (2007) findings revealed that communities prefer outcomes that benefit the entire community and take cognisance of existing culture, norms and traditions. As such, during the early community engagement, addressing social-cultural tensions that may arise between universities and communities is key in setting a working partnership. Coetzee (2012) argues that, cognisant that universities will lead to an inflow of knowledge, all community stakeholders should strengthen the knowledge frameworks of all stakeholders involved. It is thus important to acknowledge risks associated with

partnerships as new skills and opportunities for growth may require communities to sacrifice their traditional set-up of managing resources. Incorporating insights from the 2005 Higher Education Collaboratives for Community Engagement and Improvement conference, which brought together academic, community, and association leaders to examine successful partnership practices between higher education and communities, I embrace the recommended guidelines for fostering collaboration between campuses and communities as presented in the table below:

Table 2.1: Guidelines to assist universities in consulting with communities during partnerships

Key stage	**What the process entails**	**Applicability to the Malawian context**
Stage I: Designing the Partnership	Genuine democratic partnerships are: • Founded on a shared vision and articulated values. • Beneficial to partnering institutions.	• Institutionalising partnerships • Developing MOUs and guidelines • Mutuality in benefits
Stage II: Building Collaborative Relationships	Genuine equitable partnerships that build strong collaborative relationships are: • Composed of interpersonal relationships based on trust and mutual respect. • Multi-dimensional: They involve the participation of multiple sectors that act in service of a complex problem. • Clearly organised and led with dynamism.	• Building and strengthening relationships • Creating and strengthening the social network – at personal and institutional level • Participation and empowerment of university and community stakeholders
Stage III: Sustaining Partnerships Over Time	Genuine democratic partnerships that will be sustained over time are: • Integrated into the mission and support systems of the partnering institutions. • Sustained by a partnership process for communication, decision-making, and the initiation of change.	• Developing a sustainability plan for the partnership • Monitoring and evaluation

	• Evaluated regularly with a focus on both methods and outcomes.	

Source, Adapted from Campus Compact Benchmarks for Campus/Community Partnerships (Campus Compact, 2000, pp. 5-7) and edited by the author

The table above offers a succinct and explicit overview of the essential stages of designing, building, and sustaining authentic university-community partnerships. As the current study investigates university-community partnerships for climate change adaptation in Malawi, this table can serve as a valuable framework for exploring whether the adaptation partnerships are founded on shared values, have established robust collaborative relationships, and are integrated into universities' and communities' mission and support systems.

2.5.6 Challenges confronting universities' partnership with communities

University-community partnerships are complex and pose several challenges, including conflicting priorities, timelines, objectives, and institutional regulations (Racin & Gordon, 2018). According to Strier (2017), one of the primary challenges is that universities tend to focus on specific disciplines rather than embracing partnership as an interdisciplinary concept. This approach can create disparities and suggest that some disciplines are more important than others, which is at odds with the principles of human development that prioritise equity and well-being (Ul Haq, 2003). Klein et al. (2011) also note that some universities prioritise abstract theoretical knowledge over practical research, which can neglect local needs and reinforce the silo model of operating in isolation from communities (Bender, 2008). Moreover, Bhagwan (2018) argues that meaningful partnerships should be rooted in local-based solutions rather than replicating Western interventions.

Institutional culture can pose a significant challenge to community engagement, according to Mtawa et al. (2016). Many universities lack a dedicated department responsible for promoting community engagement, which can leave individual academics to establish connections between their teaching, research, and engagement projects. Another obstacle relates to the time that universities spend meaningfully partnering with communities. Hardwick (2013) notes that the administrative and logistical processes required to form partnerships can be rigorous and may overlook critical steps. Additionally,

Gelmon et al. (2013) suggest that some staff may lack the necessary skills for community engagement, such as understanding community expectations and concerns, which can derail the process and lead to unauthentic partnerships lacking key sustainability capabilities. Cooper and Orrell (2016) also highlight that insufficient resources and infrastructure in communities can lead universities to hold meetings on their well-equipped campuses, which may not reflect the lived experiences of community members. Furthermore, community members may feel universities prioritise specific teaching and research goals over addressing societal challenges when initiating engagement partnerships (Strier, 2010). Despite these challenges, partnerships with communities remain vital for supporting climate adaptation messages in communities (GoM, 2021).

In the context of Malawi, lack of funding and capacity are key issues in universities partnering with communities (GoM, 2019). Further, Zulu (2016) cautioned that much as adaptation is a social learning process, the lack of flexible funding for collaborative research does not allow intentional co-learning. Despite limited funding and capacity challenges, universities partnering with communities remain crucial to supporting community adaptation efforts in Malawi. While the lack of flexible funding can hinder this process, the importance of community partnerships in climate adaptation cannot be overstated (GoM, 2019). By working together to address the challenges of climate change, universities and communities can develop sustainable solutions that promote resilience and enhance the well-being of rural Malawians. Given the challenges posed by traditional university-community partnerships, there is a need for a new approach that addresses these obstacles and promotes more meaningful and sustainable engagement.

2.5.7 A new approach to university-community partnerships

Strier (2013) warns that without a genuine partnership, it is unlikely that university-community partnerships would be well operationalised, with the benefit from the interchange of knowledge unlikely to remain fundamental. Continued challenges, such as internal tensions and conflicts, which harm the spirit of collaboration between partners and undermine the success of partnerships, call for a new paradigm conceptualisation of university-community partnerships (Butcher et al., 2011). Several scholars agree that partnerships must be transformational in nature, characterised by comprehensiveness,

shared planning, management and evaluation, mutuality, long-term commitment and strong leadership support (Strier, 2013; Brown-Luthango, 2013; Carlton et al., 2009; Fisher et al., 2005). According to Brown-Luthango (2013), university-community partnerships need to embrace engaged scholarship in practice, suggesting a paradigm shift from transactional to transformational partnerships. Thus, Butcher et al. (2011) distinguish between ‘‘transactional’’ partnerships and ‘‘transformational partnerships”. Transactional partnerships are based on the achievement of individual or institutional interests through exchange processes. However, both parts that benefit from the interchange will likely remain unchanged. In contrast, a transformational partnership has multiple dimensions, including ideological, ethical, institutional and social, in which all the partners pursue common actions and goals as they use their capabilities and assets to tackle complex social issues.

Bowers (2018), Peterson (2009) and Barker (2004) also argue that university-community partnerships should not only focus on the material benefits for the two actors, as has been the case previously. They argue that engaged scholarship must be framed from a human development perspective, with knowledge production aimed at expanding the social, cultural and human capital of both communities and universities, embracing the social and diverse notions of partners while addressing social ills. For instance, partnerships should produce knowledge to solve society's challenges and to build social connections among the actors. It should cultivate interdisciplinary collaboration that requires cultivating dialogue, developing shared language and understandings, reflection, and deep learning (Bowers, 2017).

Goddard et al. (2016) note that university-community partnerships have always been university-centric, implying that efforts for their existence have been an agenda championed by universities. Most partnership programmes have been aligned to university funding, creating loopholes for ownership and sustainability (Giles, 2016). This has created gaps in how several community structures have not been prioritised as actors in most partnership programmes (Amey et al., 2007; Maurrasse, 2002). The new paradigm for university-community partnerships must be a transactional, transitional and transformational engagement, disassociating itself from exploitive practices to committed

behaviours, avoiding traditional pitfalls of imbalance and being mindful of shared goals (Bowen et al., 2010)

For a partnership to be successful, it must prioritise people and recognise the heterogeneous nature of local communities, including their skills, power relations, existing resources, and values (Bowers, 2017). University-community partnerships are more than just sharing benefits; they also aim to advance social and cultural agendas (Strier, 2017). Therefore, a new paradigm for these partnerships must address these critical issues. However, the question remains: what would an ideal new university-community partnership look like? In my vision, such a partnership would prioritise people and embrace critical human development tenets such as equity, participation, empowerment, sustainability, and efficient use of resources.

While much literature on university partnerships in Malawi has focused on university-industry collaborations and their contributions to sustainable development (Chiotha, 2018), innovation (Nkhoma, 2017), innovation uptake (Chamdimba, 2021), and economic development (Sanudi, 2020), less attention has been paid to university-community partnerships in the context of climate change. While some studies have explored LUANAR's role in supporting community adaptation efforts (e.g. Mwase, 2014), community perspectives are often missing. This study aims to bridge this gap by exploring community perspectives on university-community partnerships in Malawi.

2.6 Conclusion

In conclusion, this chapter has provided a review of the literature on the role of universities in regard to climate change, university-community partnerships and SD. The following key themes emerged from the literature reviewed that raise questions on university-community partnerships for climate adaptation in Malawi.

First, I have discussed the role and contribution of university-community partnerships to climate change adaptation, which have continued to gather prominence in the higher education discourse. The chapter reveals that despite universities being recognised in responding to climate change, efforts within climate adaptation response in Africa, especially Malawi, remain under-researched. Second, understanding the nature of

university-community partnerships' response interventions to climate change have focused mostly on the physical nature of climate change. For instance, as observed from above, most interventions have fallen short of the contribution of local communities in the planning and implementation of adaptation interventions. Against the backdrop that most emissions are human-induced, I argue that adaptation efforts must shift the focus and integrate local communities. In their role of partnering communities, universities are well positioned to lead this task. Therefore, this study will contribute to understanding specific issues to be prioritised in these university-community partnerships for climate change adaptation in Malawi. In conclusion, the chapter discussed concerns about the insufficient understanding of university-community partnerships in Africa, which has resulted in claims that most partnerships adopt a top-down approach. Additionally, the literature review identified a lack of information on how partnerships are implemented in Malawi. In the following chapter, I explore the human development approach, a people centred theoretical framework that presents a comprehensive perspective for exploring university-community partnerships for climate change adaptation.

Chapter 3：Theorising university-community partnerships for climate adaptation: A human development approach

3.1 Introduction

This chapter describes the conceptual framework that guides this study. The framework is based on the theoretical foundations of the human development approach, which aims to conceptualise the ideology and practicality of a human-development centred university-community partnership for climate change adaptation. Before discussing this conceptual framework, I introduce the sustainable livelihoods approach, basic needs approach, and human capital approach, which are potential frameworks for exploring university-community partnerships but run short of suitability in application for the purposes of this study. I outline each potential framework, acknowledge its strengths and weaknesses, and conclude by justifying why the human development approach is ideal for this study.

3.2 Potential frameworks and approaches for conceptualising university community-partnerships

3.2.1 The sustainable livelihoods framework

The sustainable livelihoods framework (SLF) was developed in 1990 by the Department for International Development (DFID) and the British State Development Cooperative Agency. It aims to provide a multidimensional livelihoods framework that supports communities' understanding of poverty. The framework promotes accelerating poverty elimination and a way of thinking about the objectives, scope, and priorities of development that better meets the needs of the poor at project and policy levels (Altarelli, 2000; Ashley & Carney, 1999). A fundamental precept of the framework is that it seeks "to identify what [people] have rather than what they do not have" and "[to] strengthen people's own inventive solutions, rather than substitute for, block or undermine them" (Moser, 1998; p. 1). In other words, the framework provides an opportunity for communities to understand poverty from their perspective and to devise eradication strategies. Serrat (2008; 1) argues that the SLF "helps formulate development activities that are people-centred, responsive and participatory, multi-level, conducted in partnership with public and private sectors, dynamic and sustainable." The SLF has been adopted by development partners such as the Cooperative for Assistance and Relief

Everywhere (CARE), Oxfam, the Food and Agriculture Organisation of the United Nations (FAO), and the UN Development Programme (UNDP) to support rural development programmes. For example, the SLF has been used to design and implement projects on natural resources management and rural development by the UK Department of International Cooperation, such as The Chars Floodplain Livelihood Project in Bangladesh and the Andhra Pradesh Rural Livelihoods Programme in India.

The SLF has three main components: capital assets, vulnerability context, and policies and institutions, and livelihood strategies and outcomes. Capital assets consist of factors that enhance or limit livelihood opportunities and comprise human, social, natural, physical, and financial assets. Vulnerability contexts depict insecurities or challenges to well-being in the face of an uncertain external environment. Policies refer to laws and appropriate structures to guide the implementation of interventions, while strategies and outcomes are the actions that bring about change.

The SLA has been credited for several reasons. First, Biggs et al. (2015) argue that the SLA facilitates the identification of community priorities for actions derived from a comprehensive assessment of the needs and interests of the communities involved (Cahn, 2002; Altarelli, 2000; Eggers, 1994; MacArthur, 1994). It is people-centred as it integrates communities' needs in the quest for sustainable livelihoods (Brocklesby & Fisher, 2003). The sustainable livelihoods framework focuses on people, their abilities, and how they can be involved in poverty reduction efforts. Moser (1998) claims that it seeks to understand the changing combinations of modes of livelihood in a dynamic and historical context. It presents an essential shift from focusing on project inputs and outputs to understanding the role of institutions with links to the micro and macro sectors and formal and informal sectors. Thus, it is a new style of policy appraisal that moves from the universal application of theories to localising development to context-specific settings so that local perspectives can be integrated into the policy framework.

Despite its strengths, the SLA has faced criticism from scholars such as Nel (2020), Biggs, Bruce & Boruff (2015), and Mdee (2002). Nel (2020) says that much as the approach seeks to understand changing combinations of modes of livelihood in a dynamic and historical context, it does not pay attention to inequalities of power. Thus it underplays the

fact that enhancing the livelihoods of one group can undermine those of another. Bruce & Boruff (2015) further contend that the SLA places too much emphasis on capital assets and assumes that they can be expanded in a general and incremental way. This observation is reductionist and potentially overrides the relevance of social assets such as networks, partnerships, and power issues in a community. Therefore, university-community partnerships, social networks, associations, and measures of inequalities and power issues would be hard to explore.

Another weakness of the sustainable livelihoods framework is the lack of implementation strategies, which are crucial for least developed countries like Sub-Saharan Africa (Biggs, Bruce & Boruff, 2015). Without clear implementation strategies, it would be difficult to link the outcomes of the partnership to the SLF because it does not examine the actual roles played by actors, power dynamics in decision-making, and issues of parity in decision-making (Nel, 2020). Therefore, using the sustainable livelihoods framework to explore partnerships for climate adaptation between universities and communities would provide an incomplete reflection of the process towards the desired outcome. It would obscure the individual's specific contributions and other determinants that shape the result.

3.2.2 Basic needs approach

The basic needs approach originated in the 1970s from the ILO's focus on providing basic needs to the poor, such as food, shelter, clothing, healthcare, and water. It is a needs-based approach that prioritises meeting the basic needs of all people as the primary objective of national and international development. However, it is criticised for not considering variations in the order of needs and people's aspirations (Frediani & Walker, 2018). The basic needs approach aims to provide opportunities for an individual's physical, mental, and social development (World Bank, 1979). It focuses on identifying and mobilising resources to cater to specific individuals and emphasises what is provided rather than income. For example, in exploring partnership interests, the basic needs approach would prioritise needs assessments to determine the minimum adaptation strategies that communities need to adapt to climate threats. The policy objective of the basic needs approach is consumption-centred, meaning that people must have essential needs. The basic needs approach acknowledges that countries will have diverse needs due to economic, social, political, and cultural variations (Word Bank 1979). However,

specific essential levels of individual consumption and availability of public services can be considered universally necessary. This perspective is helpful in establishing global targets in measured quantities. Although the approach is useful in defining the poverty line globally, it is limited in a number of ways. First, Streeten (1979) argues that the process focuses on ends in contrast to means of achieving a particular deliverable and it pays special attention to non-material needs such as the need for self-reliance, political freedom and security and participation in decision making. Second, as argued by Frediani and Walker (2018), Amartya Sen's writing on people's capabilities is a direct critique of the concept of paternalism, which is implicit in the basic needs approach, because it predetermines the notion of what a need is and what is basic. Aside from having minimum services, people should have equal freedom to choose their valued ways of life. Thus, applying the basic needs approach in exploring university-community partnerships would neglect to identify the capabilities and freedoms necessary for a sustained partnership. Third, the basic needs approach also fails to recognise agency; people are considered beneficiaries of development processes and not agents of it (Fukuda-Parr, 2003). This omission poses a risk of creating a power imbalance between different actors in partnerships as key questions, such as who determines the basic needs and basic tenets of participation and empowerment, are neglected (Alkire, 2005).

3.2.3 Human capital approach

The human capital approach origins date back to Adam Smith's and William Petty's ideas on focusing on education and training as investments people make to increase their productivity (Tiwari & Ibrahim, 2012). Hence, the approach has evolved and undergone several modifications by Becker (1964) and Mincer (1974) to become a dominant tool for analysing economic well-being. Becker (1964) defines human capital as a set of competencies a person holds towards production. This definition entails that human capital mostly regards consumption in the form of goods and services as an end goal of one's human capital (Chiappero-Martinetti & Sabadash, 2012).

The human capital approach further regards labour in economic terms (Sen, 1999). Thus, in higher education discourse, the approach views education or training as a means to raise the economic productivity of workers. This is most evidenced when higher education institutions view knowledge and skills as a lifetime investment aimed at raising workers'

future income (Tiwari & Ibrahim, 2012). The human capital approach postulates that the value of higher education in the human capital approach is manifested in economic returns other than holistic human development facets (Walker, 2012). Higher education outcomes are therefore viewed as an economic return on the performance of individuals in the labour market, perceived as having utilised the knowledge and skills imparted to them (Thomson et al., 2008). Focusing solely on the economic returns associated with the human capital approach can be limiting when exploring university-community partnerships in poor countries like Malawi. This is because a narrow focus on economic returns may not adequately capture the complexities and nuances of these partnerships and may not fully address the needs and priorities of the community. Instead, a more holistic approach that takes into account the social, cultural, and political dimensions of these partnerships may be more effective in promoting SD and positive social change in poor countries.

The human capital approach has received its share of criticism. First, the notion of capital employed in the approach is purely quantitative, economic-centred and lacks the multidimensionality of viewing development holistically (see Walker & McLean, 2016; Boni & Walker, 2013; Chiappero-Martinetti and Sabadash, 2012; Nussbaum, 2011; Nixon, 2011). So much focus is on the national economic returns of the approach, which are primarily measured in quantitative terms. This viewpoint lacks recognition of the contribution of other social and cultural factors, such as social networks, partnerships and inequality levels, that might affect economic growth. Thus, in analysing the university-community partnership, the approach would be limited in understanding how social and cultural dimensions affect partnership outcomes.

Second, in applying the human capital approach to university-community partnership exploration, the intention would be limited to how education as an investment shapes the partnership outcomes. As such, the engagement efforts pursued would often regard universities as ends in themselves, in which partnership would be viewed as a platform for making known to the community what the university is doing for them. Saltmarsh, Hartley, Clayton (2009) call this a dominant academic culture of universities often recognised as technocrats to public problems. This conceptualisation eventually creates

power imbalances that limit other stakeholders' influence and contribution to the partnership functionality. Not undermining the role of university stakeholders, ideal partnerships, however, ought to be framed from an equity engagement perspective, grounded in a principle of shared knowledge and understanding (Kretzmann & McKnight, 1993).

Third, the human capital approach misses the point that the quality of human life is multi-dimensional and multifaceted (Sen, 1999). Thus, in narrowing the thinking to economic productivity, the approach fails to address other facets of human life, such as inequalities and variations in human well-being (Sen, 1987). For the sake of partnership, the focus on mostly utility skills would be misguiding as these only represent a partial aspect of human life. Hence, exploring the nature of partnership goes beyond the economic dimensions experienced by stakeholders to include a more holistic human perspective that is multi-dimensional. For instance, in phrasing questions to understand interests and envisioned people-centred partnership, the key questions need to be framed broadly to reflect on holistic aspects of partnerships. Such questions would be like "How should a partnership that promotes values of holistic human development look?" The absence of such divergent exploration in the human capital approach makes it not ideal for this study.

3.2.4 The capability approach

The capability approach (CA) is a framework for analysing social issues which may include poverty, well-being and quality of life, taking into consideration freedom, poverty levels, social inequalities and other contextual factors (Robeyns, 2017; Alkire, 2010). Thus, the CA is one of the normative approach used to evaluate general well-being, considering social and cultural limitations that impede progress. Its conception dates back to the 1980s when Sen brought together ideas focusing on freedom to expand one's capabilities to advance well-being. Over the years, it has been further taken up and developed by Martha Nussbaum and other proponents who have applied it in different contexts and perspectives. The CA comprises essential concepts for comprehending and assessing human development. These concepts include capabilities, functionings, agency, conversion factors and well-being, as described below.

- Capabilities are viewed as opportunities or freedoms that enable individuals to pursue what they value and become who they aspire to be (Walker & Unterhalter,

2007; Robeyns, 2003; Sen, 1987). This perspective differs from the conventional utilitarian approach, which primarily measures development based on economic progress. According to the CA literature, defining people's capabilities to function should be the starting point for achieving well-being, justice, and development (Crocker & Robeyns, 2010).

- Functionings focus on what has been achieved and is desired. In short, functionings are beings and doings (Sen, 1992, 1999). Wilson-Strydom (2011) further defines functionings as achieved outcomes, which are things that a person can do or be. The capability approach emphasises real opportunities rather than the means of living. According to Sen (1987), the capability is the ability to achieve, while functioning is an achievement.
- Agency refers to an individual's ability to take initiative and achieve a state of being they value. As Walker (2006) explains, agency is the capacity to pursue important goals that align with an individual's desired way of life (p. 165). Each person is an agent of their development and the life they wish to live.
- Conversion factors relate to individuals' ability to convert their available resources and circumstances into functionings (Robeyns, 2017). People have different capabilities to convert resources into functionings, which personal, social, or environmental factors can influence. These factors can either support or impede an individual's ability to transform available resources or opportunities into valued functionings, as Nussbaum (2000) and Sen (1999) noted.
- Well-being: according to Sen (1999), well-being is the ability to live a life that one has reason to value. Robeyns (2017) further explains that well-being is a measure of how well a person's life is going for them. Therefore, well-being is valuable for an individual, such as being educated, nourished, and healthy. Well-being is closely related to functioning, as it represents an achieved state of being (Alkire, 2005; Kuhumba, 2020). Sen (2004) also notes that well-being is the ultimate goal of development, where individuals can achieve what they value in life. Although agency and well-being are closely related, they do not necessarily occur together (Deneulin, 2009). This relationship is based on the idea that individual agency plays a central role in addressing afflictions that limit well-being (Deneulin, 2004).

In regards to the capability approach, Martha Nussbaum and Amartya Sen both contributed significantly to the capability approach, but they advance distinct perspectives on the construction of lists of capabilities. For instance, Nussbaum (2000) developed a fixed list of central human capabilities that she argues are necessary for a life with dignity. On the other hand, Sen's approach is more open-ended, versatile and emphasizes the importance of allowing people to have the freedom to choose the capabilities that are most meaningful to them in their particular cultural, social, and economic context (Jadhav, 2020). Sen's focus is on the process of expanding people's capabilities rather than prescribing a specific list.

The divergence in approaches to constructing lists stems from their distinct philosophical perspectives. Sen's approach reflects a more pluralistic understanding of human well-being, acknowledging the diversity of human values and the need for flexibility in defining capabilities. Nussbaum's approach, on the other hand, is influenced by her emphasis on certain core capabilities that she believes are essential for all individuals to live a dignified life. While Sen's approach allows for greater contextual sensitivity, Nussbaum's approach provides a more structured and comprehensive framework for evaluating well-being. However, the differences in their approaches highlight the ongoing debate within the capability approach regarding the universality versus flexibility of the list of capabilities, and the extent to which they should be prescriptive or open-ended.

While the capability approach may be used to explore individual capabilities and functionings, the current study does not aim to assess individual capabilities and functionings. As Sen (1993) contends, the capability approach is primarily concerned with identifying value objects and evaluating functionings and capabilities. However, this study seeks to explore the functionality of the adaptation partnership from its broader and more holistic perspective. Thus, instead of focusing only on individuals' capabilities to achieve their goals, the study aims to explore what these partnerships look like, what they can achieve, and whether they create an enabling environment for advancing strategies driven by local communities.

In summary, the sustainable livelihoods framework, basic needs approach, and human capital approach are insufficient for conceptualising university-community partnerships

for climate change adaptation from a human development-centred perspective. These approaches overlook the multidimensional nature of university-community partnerships by ignoring social and cultural limitations that could affect human development. They display paternalistic traits that provide little scope for marginalised groups' voices in the partnership. Furthermore, these approaches fail to recognise the value of freedoms, well-being, and deprivations as key elements that determine the functionality of university-community partnerships. Although the capability approach may be applied, this study's primary focus is not on individual capabilities but on the partnership structure as a whole and the relational aspects of partnerships.

Below in table 3.1 I summarise the potential frameworks discussed so far, before discussing and defending my decision to work with the human development approach.

Table 3.1. Summary of the potential framework discussed in this study

Approach/ Framework/ Theory	Origin	Main ideas	Application	Strengths	Weaknesses
Sustainable Livelihoods Framework	Developed by the UK Department for International Development in 1997	Investigates poor people's livelihoods whilst visualising the main factors of influence. considers the interdepend-ence of economic, social, and environmental factors	Used in development projects to promote sustainable livelihoods and reduce poverty.	Analytical tool for understand-ing livelihoods and their sustainability	Can be complex and difficult to apply in practice. For example, the difficulties to measure and to compare social capital

Basic Needs Approach	Developed by economist Mahbub ul Haq in the 1970s	Emphasizes the importance of meeting basic human needs, such as food, shelter, and healthcare, before addressing other development goals.	Used in development projects to ensure that basic needs are met before moving on to other goals.	Provides a clear focus on meeting basic needs	May not be sufficient for addressing more complex development challenges such as climate change
Human Capital Theory	Developed by economist Theodore Schultz in the 1960s	Views education and training as investments in human capital that can lead to increased productivity and economic growth.	Used to guide investments in education and training.	Highlights the importance of investing in human capital	May overlook other factors that contribute to the adaptation partnership, such as social capital.
Capabilities approach	Developed by economist Amartya Sen in the 1980s	Emphasises the importance of expanding people's capabilities or ability to do and be what they value.	Used to guide development policies and programmes that aim to expand people's capabilities	Provides a broad and flexible framework for understand-ing development	The question of the list is debatable Much as it values groups, communities, it is too individualistic

3.3 Introducing the human development approach

The human development approach is considered the brainchild of Pakistani economist Mahbub ul Haq, often called the father of the reports (Morse, 2004). This framework was developed as a critique of the Gross Domestic Product (GDP) approach, which measures development progress in terms of economic progress. Ul Haq (2003) championed the idea that development should be "people-centred" and should focus on expanding the richness of human life beyond just the economy (Stewart, 2019; Ul Haq, 2003). He argued that "human lives can go much better and be much richer in well-being and freedom, as the human agency can deliberately bring about a radical change" (ul Haq 2003, p. 21). The human development approach was later institutionalised, became a central focus in economics and development literature, and was incorporated into the United Nations Development Programme (UNDP) Human Development Report (HDR) reports. The HDRs are considered the "flagship publications not only for the UNDP but possibly of the entire UN system" (Sagar & Najam, 1999, p. 743). The first HDR in 1990 defines human development as "both the process of widening people's choices and the level of their achieved well-being" (UNDP 1990, p. 9). This framework is widely credited with expanding ideas about the richness of human life by acknowledging the enlargement of people's choices (Sen, 1999; UNDP, 1990). The human development approach emphasises that economic growth is only a means to an end and that other tenets beyond economic measures are important for measuring and conceiving development. People are at the centre and are treated as both ends and means of development processes (ul Haq, 2003). The human development approach mainly focuses on expanding human capabilities to achieve valued ends (Alkire, 2010). Despite this institutionalisation, the idea faced some questions globally on how to demonstrate the linkage and interdependence of economic growth and human progress (UNDP, 1990). Fukuda-Parr & Kumar (2003) further raised important questions such as:

> Were people truly enjoying an expansion in their capabilities? Has there been a significant improvement in their quality of life? Do they have more of what they cherish? How free are they? Or how equal? (Fukuda-Parr and Kumar, 2003, p. xxi).

Nonetheless, the report reoriented the global debate on economic well-being and human development to focus on the notion that development is not just about the expansion of income and wealth and strengthened the evolving literature on economic inequality, social choice, and poverty (Sagar & Najam, 1999). To further address the questions raised above, the accompanying Human Development Index (HDI) as an operational indicator provides an index of three different but interrelated concepts deemed relevant for attaining human development. The three concepts are national data on life expectancy, education and GDP per capita, which the HDI as a composite statistic tool aggregates to measure progress in human development. In this way, the human development approach has played a crucial role in preserving the notion that development goes beyond mere wealth accumulation to include the country's overall level of human development and is often used to compare countries' progress over time.

3.3.1 Criticisms of the human development approach

Notwithstanding, the human development approach does have some limitations. The main criticism against the approach in comparison to other concepts of understanding well-being and poverty is the difficulties faced logistically in operationalising the commendably broad, multidimensional, and nuanced aspects of the approach into reliable policy practice (Alkire, 2005; Fukuda-Parr, 2003; Gasper, 2002). Given the prominence of the HDI within the HDRs, critiques have been raised on the quality of the data which informs the HDRs, the methodology of capturing data, the use of national averages and the choice of the three components and their additivity as the focus of human development (Booysen, 2002; Morse, 2002; Loup et al., 2000; Sagar & Najam, 1998; Murray, 1991; Kelly, 1991) Despite these challenges, the HDRs continue to clarify on the unfeasibility of the HDI to capture all aspects of human development completely. For instance, Fukuda-Parr (2002) provided brief explanation during the 2002 report as below:

> Ironically, the focus on human development has fallen victim to the success of its HDI. The HDI has reinforced the restricted interpretation and oversimplification of the concept of human development (…). This has obscured the wider and more complex concept of human development, the expansion of capacities that increase the possibilities of people to live the life they desire and value. (…). Political liberty, participation in community life, and physical safety should be valued, but they are

> not included in the HDI because they are very difficult to measure adequately, and not because they are less important for human development (UNDP, 2002, p. 53).

Therefore, despite the shortfalls, the human development approach is considered a more holistic approach because of its focus on enlarging people's choices to live a life they desire (Alkire, 2010, 2007; McNeil, 2007). Fundamentally, the theoretical foundation of human development is on expanding opportunities/human choices within social, economic, cultural, or political spheres so that people can lead meaningful lives (ul Haq, 2003). The HDI has been widely utilised to examine human development, is applicable to nearly all nations, and provides a more thorough assessment of welfare compared to indicators that rely solely on economic data (Perkins et al., 2021). As such, it has been used as the basis for the Human Development Index (HDI, which indicates that it can be applied practically. Thus, the approach does offer the conceptual tools needed for this study.

3.3.2 Applying the human development approach to higher education

Several scholars have shown how the human development approach can be used to theoretically and empirically explore the relationship between universities and communities in addressing social challenges and over a range of issues relating to human well-being. Sen, the Nobel Prize-winning economist, has written on human development and its application to education. In his book *Development as Freedom*, Sen contends that education is a crucial factor in human development and should be regarded as a means of enhancing human capabilities (Sen, 1999). Other scholars further contend that the human development approach serves as a normative framework and is used with the capability approach to explore and design interdisciplinary frameworks on higher education and human development, social justice, quality of education, inequalities, and epistemic justice (see Walker & Boni, 2016; Mtawa, 2017; Mathebula, 2018; Penz et al., 2011; Hart et al., 2009). Specifically in the context of Southern Africa, Mtawa and Fongwa (2022: p. 70) posit that the human development (HD) approach “provides framing elements for service-learning partnerships to be equitable, inclusive, empowering and sustainable, while enhancing community members’ voices and their capacity to exercise the principle of each person as an end”. Therefore, conceptualising the university-community partnership for climate adaptation requires a broad approach that recognises

the expansion of people's choices and opportunities for a better life. For instance, while not writing on climate adaptation partnerships, Jacoby and Associates (2003,p. 7) incorporate the principle of reciprocity, which adds further dimensions to the understanding of authentic partnerships, and they underscore that:

> Truly reciprocal partnerships are also termed collaborations, defined as a mutually beneficial and well-defined relationship [that] includes a commitment to: a definition of mutual goals; a jointly developed structure and shared responsibility; mutual authority and accountability for success; and sharing not only of responsibilities but also of the rewards.

In this study, the human development approach is applied to explore what kind of partnership exists between the university and communities and whether the partnership creates opportunities for local communities to participate in the climate adaptation partnership. The approach attempts to foreground the critical role of universities in partnering with communities to address societal challenges. It locates partnerships with the community as a core function of universities and as a requirement to uphold the university's social responsibility of working with the communities it serves (Bhagwan, 2017; Ntawa et al., 2015; Bender, 2008). Thus, the human development approach provides an essential point of focus for the relationship between universities and communities in addressing societal challenges, as highlighted in the definition adopted from the Centre for Higher Education Transformation (CHET), which defines CE as

> . . .a systematic relationship between Higher Education [institutions] and [their] environment [communities] that is characterized by mutually beneficial interaction in the sense that it enriches learning, teaching and research and simultaneously addresses societal problems, issues and challenges (Centre for Higher Education Transformation (CHET), 2003, p. 4).

The definition emphasises knowledge co-production between the university and communities and foregrounds reciprocity in that much as the knowledge may benefit the academy, it must also focus on addressing the needs of the people. In this way, the human development approach widens the literature discourse that university functions should benefit communities. It argues that the objective of development is to expand what people are able to do and be, thus putting people's needs at the core of the discussion

(ul Haq 2003; Sen 1999; UNDP 1990). This implies that communities must cultivate relevant skills to be able to contribute meaningfully to the development agenda. Thus, in exploring how the university-community partnership for climate adaptation is operationalised, the human development approach provides a conceptual foundation to understand whether these partnerships are people-centred and whether they enlarge people's opportunities and choices to decide on the nature, mode, and impact of partnerships.

The human development approach also views development beyond economic gains by focusing on enlarging people's choices. It asserts that the objective of development should be to create an enabling environment for people to enjoy what they value (Walker, and Fongwa 2017; Nussbaum, 2011; Alkire & Denelium, 2010; ul Haq, 2003; Sen, 1999). Therefore, exploring university-community partnerships for climate change adaptation requires a multidimensional approach that takes into account the social, economic, and cultural dimensions of climate change adaptation. Thus, community members would be able to choose and value what and how they can expand their abilities to undertake preferred adaptation strategies.

According to Boyer (1990), university-community partnerships aim to advance the scholarship of engagement, which entails that higher education institutions must be linked to the public spaces they reside in. This approach recognises that universities can both contribute to and learn from the communities around them (see Fongwa et al 2022; Ntawa & Fongwa, 2016; Preece, 2013). On the other hand, the human development approach is about putting the needs of the communities first. Therefore, for the purpose of this study, conceptualising university-community partnerships for climate change adaptation entails exploring the relationship between universities and communities with the aim of positioning the community's climate adaptation needs at the centre of university activities. This implies opening up opportunities for communities to contribute and actively participate in the climate adaptation process.

The choice for the human development approach is further motivated by the ideas of Sen (2007) that the approach has become the flagship in the battle of converting the development process into a more multifaceted and humanistic practice. Sen's ideas

recognise that development is not just about economic growth but also about expanding people's capabilities and freedoms and enhancing their well-being. By adopting a human development approach in the conceptualisation of university-community partnerships for climate change adaptation, this study aims to promote a more holistic and inclusive approach to development that recognises the multidimensional nature of climate change adaptation and prioritises the needs of communities. Ul Haq (2003) explained further that the human development framework is multidimensional; hence, in partnership evaluation, the actors in the university-community partnership would not be viewed as single entities but as a joint force of agents able to devise meaningful pathways for climate change adaptation.

3.3.3 Key human development principles used in exploring the partnership functionality

The human development principles that inform the study's conceptualisation of university-community partnership are equity, participation and empowerment, efficiency, and sustainability. In this section, I start by defining each one and then apply them in relation to exploring their applicability to the study.

3.3.3.1 Equity

Alkire (2010) defines equity as fairness, especially concerning access to opportunities and outcomes. Equity originates from the principle of moral equality, where people ought to be treated as equals. The principle of equity recognises that those with unequal opportunities due to various disadvantages may require preferential treatment or affirmative action (Alkire & Deneulin, 2009). The idea behind this construct is premised on building a fair, reciprocal relationship that actively engages all actors in the partnerships. Equitable partnerships open up freedom and opportunities and enhance participation, thus making the concept relational (Saltmarsh et al., 2009). In this case, the analysis would focus on whether the university-community partnership enhances free and meaningful contributions from all actors in the partnership in framing the desired framework. Equity further relates to promoting equality for all stakeholders, seeking to redistribute power, and further open up spaces for all actors to participate freely in the course of the partnership. In the case of this study, this narrative relates closely with the university-community partnership concept in which key actors are called to promote the principle of fairness, distributive justice, and deconstructing power imbalances for all

partners to contribute fully. Power must create platforms for all stakeholders to initiate, dialogue, and contribute meaningfully to the implementation agenda (Saltmarsh et al., 2009). Therefore, in applying this concept, the study undertakes an explorative lens of understanding how university-community partners view applying the concept of fairness in ensuring access to opportunities and outcomes within the university-community partnership.

Equity is also viewed in terms of collaboration between the university and communities. A collaborative, people-centred partnership means that the partnership must be respectful of and responsive to individual needs, values, priorities, and preferences, striving to maximise all actors' well-being without compromising the desired goal (Stoecker, 2003). Ultimately people-centred collaboration fosters mutual respect (Beckman, 2009). This implies that to achieve a common desired goal, the self-interest of specific individuals must not be advanced at the expense of the self-interest of others in the community. In the case of a partnership between universities and communities, the principle elucidates the value of collaborative planning for a desired common goal. Thus, in applying this component, the study offers a valuable lens of understanding whether the current partnership engages all actors in identifying common climate adaptation strategies and whether the entire process is collaborative and promotes mutual interests.

3.3.3.2 Participation and empowerment

Participation and empowerment entail allowing people to make life decisions and exercise their choices (Alkire & Deneulin, 2010). People should be treated as both the means and ends of the development process. This concept underpins empowering and transforming people from being mere recipients to becoming active participants of development aspirations by empowering them with the knowledge and skills that they can use to participate in decision-making and realise desired goals (Alkire, 2010). Equally, developmental aspirations can only be achieved if partners fully participate in decision-making (Boni & Gasper, 2012). Active participation helps society grow and reach optimal potential (Dewey, 1916). The writings of Freire (1985) and Dewey (1916) provided the foundation blocks for appreciating the value of active participation in community engagement projects. Freire (1985) particularly emphasised that community stakeholders at individual or group levels ought to reflect and engage with their immediate environment

to bring about the desired change. From a human development approach perspective, Alkire and Deneulim (2010) contend that meaningful community development involves the active participation of communities in all critical stages of the development process. This implies creating opportunities for community members to participate in key decisions regarding university-community partnerships. Thus, in exploring a university-community partnership, the principle of participation and empowerment is used to explore whether and how the existing partnership provides the space, freedoms, and equal opportunities for partners to contribute as agents, whether at the individual or group level. As Freedman, Kruk and Walton (2018) contend, participation and empowerment are rooted in the idea of granting individuals the liberty to make choices in various aspects of their lives (such as personal, social, and professional), ultimately leading to a sense of autonomy.

3.3.3.3 Efficiency

Efficiency refers to maximising human, material, and community resources to expand individual and community capabilities to achieve the desired goal (Alkire, 2010). It implies optimal utilisation of the most cost-effective measures to reach the desired goal (Alkire & Deneulin, 2009). The key to demonstrating efficiency is to ensure that interventions offer the highest impact in terms of what actors in the partnership value as their desired end. From a human development perspective, efficiency implies optimal utilisation of the least cost-effective measures to reach the desired goal (Alkire & Deneulin, 2009). The key to demonstrating efficiency is ensuring that the partnership offers the highest impact in terms of what actors in the partnership value as their desired end. Therefore, the human development approach prompts us to think about how relationships shape the functionality of climate adaptation partnerships. The significance of such an assessment helps to establish whether the partnership maximises the use of available resources to create meaningful pathways for climate change adaptation. As Alkire (2010, p. 7) argues, “It is necessary to demonstrate that the chosen intervention is the one that offers the best results in enlarging choices and enabling optimum use of opportunities by people”. In partnership operationalisation, the efficiency principle highlights the need to consider the dynamic nature of resources in different contexts. This is because what may be deemed efficient at a particular moment may not necessarily remain effective in the future as the context continues to evolve (Alkire, 2009).

3.3.3.4 Sustainability

Sustainability refers to the holistic durability of development initiatives through the optimal use of existing natural resources in development's economic, social, political and environmental spheres (Alkire, 2010). The human development approach recognises that economic growth and development should not come at the expense of the environment and natural resources. Instead, SD requires a balance between economic, social, and environmental factors to ensure that current and future generations enjoy a high quality of life. As sustainability strategies vary in scope, participants, governance models, purpose, and levels of activity partnerships ought to be sustainable (Axelsson et al. 2011; Kretmann & Mc Knight, 1993). Thus, in applying partnerships for sustainability, the study offers an opportunity to explore whether the partnership principles promote collaboration, networking, ownership and agency, eventually enhancing long-term continuity. The human development approach views sustainability as a multifaceted concept that encompasses intergenerational equity. It emphasises the importance of preserving individuals' ability to exercise their fundamental capabilities freely, thereby ensuring their long-term well-being.

3.3.3.5 Well-being

The concept of well-being in the human development approach refers to the overall quality of life that individuals experience or anticipate, encompassing their freedoms and accomplishments (Sen, 1992). It pertains to an individual's ability to pursue happiness, maintain good health, function effectively, and satisfy their preferences according to their capabilities. On the other hand, well-being achievement refers to the actual attainment of those elements that contribute to an individual's well-being (Sen, 1992). It represents the desired goal and is assessed based on the opportunities and freedoms individuals have to achieve their goals. In the context of this study, exploring well-being as an end to the adaptation process offers an opportunity to understand whether communities are able to advance their interests in undertaking adaptation interventions that address their adaptation needs.

3.4 Bounded agency's relevance to the study

Bounded agency refers to the intricate relationship between an individual's motivation and the social and territorial structures surrounding them when they participate in learning activities (Evans, 2007). In this study, bounded agency is preferred over agency, which is

a person's ability to pursue and realise goals that they value and have reason to value (Robeyns, 2010). This is because the concept of bounded agency acknowledges that individuals and communities may have limited power and resources to fully exercise their agency in addressing complex issues like climate change. It recognises that agency is not solely an individual attribute but is shaped by social, cultural, and political structures. Therefore, exploring bounded agency allows us to understand the constraints and opportunities that individuals and communities face in taking action on climate change and how partnerships with universities can offer support in addressing these challenges. Further, exploring the concept of bounded agency in the aforementioned five components above is crucial as it teases out the interplay of how the structure of the partnership not only provides motivations or barriers to communities who wish to participate in adaptation initiatives but also affects whether and how communities are able to take action, or to develop a desire to take action.

3.5 Conclusion

In this chapter, I have discussed the human development approach as the main conceptual framework for the study and argued that it is a suitable multidimensional framework for analysing university-community partnerships. I have unpacked the core principles of the human development approach and aligned them with exploring university-community partnerships for climate change adaptation. Given that the study focuses on university-community partnerships for climate change adaptation, the human development approach is more suitable as it allows for a more nuanced exploration of how these partnerships can create opportunities for communities to advance their adaptation interests in ways that align with their community adaptation interests. The study further integrates the concept of well-being and bounded agency into the conceptual framework to understand how communities perceive well-being as the end result of adaptation interventions and the role of bounded agency in navigating institutional and structural challenges in the partnership.

Chapter 4 : Research Methodology

4.1 Introduction

This chapter describes the methodology and research framework I adopted for the study. The chapter begins with an outline of the research paradigm, followed by a description of the research design, data collection strategies, and data analysis methods applied to gather data that provides the evidentiary base for this study. I then conclude the chapter with an account of the ethical considerations and challenges with the research rigour, followed by a discussion of the study's limitations and a conclusion. Building on the Chapter 1 discussion, which introduced the main aim of the study, the research methodology chapter is aimed at addressing the central research question:

> How can universities contribute to improving vulnerable communities' adaptation to climate change in Malawi through university-community partnerships?

To answer the main question above, the study was guided by the following sub-research questions:

i. What are the motivations for and successes of existing climate adaptation partnerships in Malawi?
ii. What specific issues should be prioritised in these university-community partnerships for climate change adaptation in Malawi?
iii. How do university-community partnerships for climate change in Malawi contribute to human development for people in vulnerable rural communities?
iv. How can the human development paradigm foster the design of a university-community adaptation partnership that enhances community well-being in Malawi?

In responding to the above research questions, the following section discusses the underlying principles or assumptions that serve as the research framework I adopted for this study.

4.2 Research paradigm

A research paradigm is a basic conceptual lens or beliefs through which a researcher examines the methodological aspects of their research (Kothari, 2011). These beliefs are

shaped by and influence a researcher's ontological and epistemological orientation. Ontology is defined by Crotty (2003) as "the study of being". It is concerned with the nature of social reality or how people imagine the social world to be. Guba and Lincoln (1989:83) further relate ontological assumptions to those that respond to the question "What is there that can be known?" or "What is the nature of reality?". Contextualising this notion in this study means reflecting on whether the university-community partnerships are patterned and predictable or are continually being constructed through human interactions.

On the other hand, epistemology refers to understanding and explaining how we know what we know (Crotty, 2003). It describes the knowledge acquisition process and the perceived relationship with knowledge (Guba & Lincoln, 1998; Maynard, 1994). For instance, in the case of this study, epistemological assumptions imply reflecting on questions like how can we know whether partnerships are people-centred? Moreover, how can we be sure of that? In other words, both my ontological and epistemological orientations inform my research paradigm, that is, my understanding of and approach to gathering knowledge on the operationalisation of the current partnerships for climate change adaptation in terms of scope, structure, functionality and insights on community perspectives.

While acknowledging several ways of classifying research paradigms, Guba and Lincoln (1994) identify four dominant research paradigms: positivism, critical theory, post-positivism, and interpretivism/constructivism. Positivism is grounded on the natural scientific inquiry of formulating and testing hypotheses, disregarding possible subjectivity from the researcher. Critical theory situates its research in the reflective assessment of social justice issues concerning society and culture. The post-positivism paradigm acknowledges elements of the positivist paradigm and its associated possible effects of biases (Kivunja & Kuyini, 2017). The interpretivism/ constructivism paradigm acknowledges multiple realities and allows the researcher to understand the viewpoint of the observed subject (Bassey, 1990). Ontologically, the study aligns with constructivism. Constructivism foregrounds multidimensionality and diversity of knowledge and acknowledges an individual's subjective understanding of a concept (Creswell, 2013). Flick (2014) further argues that knowledge is a subjective human construct, often created based on our interaction with others and hence must be understood in respect of time,

context, and values. Thus, our perspective on the world has a significant impact on how we search for solutions to the research problem. Constructivism, therefore, accepts “the complexity of ideas rather than narrowing meanings to a few categories of ideas" (Creswell, 2013, p. 8). This study, among other things, is grounded on understanding the diverse roles played by university-community partnership stakeholders in addressing climate adaptation, which is a multidimensional concept.

For this reason, a constructivist framing was adopted in this study, where the participants’ lived experiences were used to comprehend their understanding of the guiding motivations, partnership opportunities, prioritised issues and the partnership's potential contribution to community adaptation and well-being. Importantly, constructivists generally do not deny the existence of a world outside human perception. Instead, they contend that the external world has a place as one of the forces that bring reality into existence through interaction. Thus, exploring the interplay of forces that bring reality and knowledge on how university-community partnerships can potentially contribute to community adaptation and well-being was critical.

Regarding epistemological orientation, the study is situated within the interpretivism paradigm, a philosophical doctrine that believes that reality and knowledge are socially constructed by human beings (Snape & Spencer, 2003). In particular, interpretivism assumes that the meaningfulness of research findings depends on the researcher's interpretation. Likewise, this study ascribes to the belief that there is no objective knowledge of the world outside of oneself and that reality regarding partnership operationalisation is multiple and divergent. Thus, the centrality of the study is to understand the views of the individuals operating within the partnership and base this understanding on their subjective experiences and perceptions. Thus, based on this perspective, I adopted a qualitative research approach, as justified in the next section.

4.2.1 Qualitative research approach

The research methodology was qualitative and aligned with constructivism and interpretivism. This choice was informed by the researcher's belief that individuals’ experiences, conceptions, perceptions and meanings are shaped and influenced by their interactions with the climate adaptation partnership (such as universities collaborating

with communities). The research focused on how the partnership between the university and the community can contribute to human development, drawing on experiences from university participants, community stakeholders, policymakers and experts. The study involved participants from various levels, each unique social-cultural, economic, and political values and positions contextualised within the partnership setting. Targeting diverse groups helped triangulate the information to enhance the validity of the results and further explore different ways of addressing the research problem.

Further, I adopted a qualitative approach as the research goals and aims could best be explored using an approach focusing on processes, meanings, and situations. By asking questions related to how university-community partnerships are operationalised in terms of scope, structure, and functionality, the study aspired to capture participants' views and experiences. For instance, the study provided a platform for community members to express their understanding, anticipated expectations, and observable outcomes of partnerships.

Further, the qualitative approach was selected because the study's exploration heavily relied on narrative accounts and thick descriptions to determine whether current university-community partnerships are people-centred or address climate adaptation challenges. Unlike the quantitative or mixed-method designs, which emphasise testing data based on pre-designed hypotheses, the choice for a qualitative approach was further motivated by the fact that the evidence gathered was drawn from multiple views for deeper understanding. Research participants included community members, third-year students, university academic and support staff, experts on climate change adaptation and policymakers.

I recognise that the qualitative approach does not claim to provide simple and complete responses to complex questions; instead, the multidimensionality and depth of the data collected nuances of what is already known. As Leedy and Ormorod (2013, p.139) state: "Qualitative researchers rarely try to simplify what they observe. Instead, they recognise that the issue they are studying has many dimensions and layers and try to portray it in its multifaceted form." Thus, I opted for a qualitative approach, foregrounded within

interpretivism and constructivism paradigms to develop an account of partners' experiences using a case study design as described in the next section.

4.2.2 Case study research design

A research design is a strategy for collecting and analysing data (Kothari, 2011). It is a blueprint for the research (Bergold & Thomas 2012; Berg, 2001). I selected the case study design for this research because it is intended to enable the researcher to develop an in-depth analysis of one or more individuals' cases, programmes, events, activities, or processes (Thomas, 2000). Distinct from other research designs, such as experimental design and cross-sectional design/survey design, the case study design was chosen because it investigates contemporary real-life phenomena within their context in detail. I was further motivated to apply the case study design because it explains two related concepts, namely, subject and analytical frame (Thomas, 2011). The subject denotes the phenomena under study or the case itself, which in my case is the LUANAR and its partnership with the surrounding communities. The analytical frame denotes the investigative framework or theory through which the subject will be viewed and which the subject explicates, which in my case, is the exploration of partnership operationalisation. Thus, a case study is a process of understanding a case through interpreting data. Given (2008, p.68) also describes a case study as a research approach in which one or more examples of phenomena are studied in depth. In this study, I align myself with Creswell's (2012, p. 617) definition of a case study as a variation of an ethnography in which the researcher explores a constrained system (for example, activities, events, processes, or individuals) based on extensive data collection. By adopting a case study research approach, I further align myself towards the advantages, according to Nisbet and Watt (1984), as cited in Cohen et al. (2007) that the results:

- Are easily understood by a wide audience (including non-academics) as they are frequently written in everyday, non-professional language.
- Are immediately intelligible; they speak for themselves. They catch unique features that may otherwise be lost in larger scale data (e.g. surveys); these unique features might hold the key to understanding the situation.
- They are strong in reality.

- They provide insights into other similar situations and cases, thereby assisting interpretation of other similar cases.
- They can be undertaken by a single researcher without needing a full research team.
- They can embrace and build in unanticipated events and uncontrolled variables.

Given that the research on university-community partnerships for climate change adaptation requires a deep understanding of participants' views, using the case study design is expected to provide clear and valid responses to the research questions described in the introduction.

Creswell (2012) further categorises case studies into three types: multiple case study, intrinsic case study and single instrumental case study. A multiple case study explores more than one unit of study and can further explore links between the units. On the other hand, an intrinsic case study is undertaken to explore a unique phenomenon and may be guided by the researcher's interest. A single instrumental case study is described as an in-depth exploration of one case to understand the problem. According to Creswell's (2012) classification of the case study designs, this study adopts the single case study because the main issue is understanding the current operationalisation of the partnership between the university and communities. The single case study is merited for being more nuanced and empirically rich while providing the researcher with a holistic account of specific phenomena (Yin, 2012; Cresswell, 2012). Much as the case study is criticised for its weak generalisability (Leedy and Ormorod, 2013), the purpose of this study was not to generalise but rather to get in-depth data about the nature of partnerships between the university and surrounding communities.

4.3 Description of study setting

LUANAR was purposively selected to serve as the site for the study. The university was formed in 2011 through an Act of Parliament No 22 by transforming the then Bunda College of Agriculture into a university with the integration of the Natural Resources College (NRC). According to the University Act (2011), the aims and objectives of LUANAR include the following:

a. to provide quality education and training in agricultural and natural resources sciences, engineering and irrigation technologies, agro-processing, entrepreneurship, trade, climate change adaptation, sustainable utilisation of natural resources, and environmental preservation of socio-economic development;
b. to encourage the advancement, dissemination, and commercialisation of research;
c. to promote industrial growth through research and dissemination of knowledge and skills;
d. to establish and support science and technology innovation centres of excellence for industrial production and manufacturing of value-added agricultural and natural resources products;
e. to develop partnerships with relevant industries for the generation, transfer, adoption, and application of technologies;
f. to develop into an institution of excellence in teaching, learning, training, Information, Communication Technology (ICT), e-learning, and research in science, technology, and biotechnology;
g. to promote practical university education, research, and training to respond to the needs of Malawi, Africa, and the world;
h. to provide specialist training in such subjects as may be found desirable by the University Council and the nation; and
i. to provide opportunities and facilities for accessing information to support the University's programmes (LUANAR Act, 2011, p. 5-6).

Based on the above aims and objectives, LUANAR's mission is:

> To advance knowledge and produce relevant graduates with entrepreneurship skills for agricultural growth and security, wealth creation, and sustainable natural resources management through teaching, training research, outreach consultancy and sound management (LUANAR Prospectus, 2016:5)

I selected LUANAR because it is the first public university in Malawi to offer agriculture and natural resources courses which encompass climate change issues (Kanyama-Phiri, 2016). It has a separate office running outreach programmes and is located in a rural area, making it easily accessible to communities. Within LUANAR, the study focuses on

the Faculty of Natural Resources and the Faculty of Development Studies for the following reasons:

i. **Suitability of respondents –** the faculties employ qualified academic staff with a climate adaptation and outreach work background.
ii. **Relevance –** the faculties offer courses related to climate change adaptation and outreach and produce graduates engaged in rural extension and climate change adaptation work.
iii. **Students' climate change and outreach internship** offers internships to third-year students to prepare them for outreach work.
iv. **Edge on securing donor funds –** staff from the two faculties receive the most donor grants for climate change and outreach.

The criteria described were suitable for the study because I was interested in examining participants with the knowledge and practical skills about climate change adaptation partnerships. As such, with the paucity of literature on climate adaptation partnerships between universities and communities in Malawi, the selected faculties were suited for this task.

I began the data collection process with a courtesy call with senior management at LUANAR to introduce my research. The courtesy call was also meant to understand how university-community partnerships fit into the university mission and to enquire about the availability of institutional policies and structures that guide partnerships. Senior management insights laid the foundation for subsequent interviews with all LUANAR respondents. For instance, the core background information on partnerships helped contextualise patterns found in interviews with other university staff. Insights on the university's opportunities, benefits and challenges in partnerships were also explored.

4.4 Participant selection

The study engaged 44 participants who were selected purposively based on their roles in the partnership. The participants were grouped into six main groups, namely LUANAR academic staff (deans of faculties and lecturers), LUANAR support staff (Directorate of Research and Outreach and Programs Coordinating Office), LUANAR students (third-

year students), experts on climate change adaptation, policymakers and local community stakeholders. The section below describes the participants in detail.

4.4.1 LUANAR university lecturers

Ten (10) LUANAR university lecturers working in the Faculties of Natural Resources and Development Studies were interviewed. The lecturers included two (2) heads of faculties, one from each faculty, and six (8) lecturers, three from each faculty. Lecturers were targeted and selected based on the following criteria set: position in office (in the case of deans); lecturer who doubles as an attachment coordinator since they supervise students while on outreach programmes; and lecturers who have more than two years of lecturing experience on climate change adaptation and extension modules. I engaged the lecturers to gather their perspectives on the value and relevance of university-community partnerships based on their classroom and field experience. Table 4.2 below summarises the lecturer staff engaged in the study.

Table 4-1 List of LUANAR lecturer staff interviewed

No	***Interviewee pseudonym**	**Role**	**Faculty**	**Department**
1	Mrs Mwale	Senior Lecturer and Attachment Coordinator	Development Studies	Extension
2	Mr Moyo	Lecturer	Natural Resources	Forestry
3	Mr Chilobwe	Senior lecturer	Natural Resources	Environmental Sciences and Management
4	Mrs Gama	Senior lecturer	Development Studies	Extension
5	Mr Tolani	Senior lecturer	Development Studies	Agriculture Education and Development Communication
6	Mrs Sagawa	Senior lecturer and attachment coordinator	Development Studies	Extension
7	Mr Mtaya	Lecturer	Natural Resources	Forestry
8	Mr Chibwana	Senior lecturer	Natural Resources	Environmental Sciences and Management
9	Mrs Nkhoma	Management	Lecturer	Extension
10	Mrs Chirwa	Lecturer	Natural Resources	Forestry
Total			10 lecturers	

Before all interviews, I provided all detailed information before participants' consent was sought. Participants were allowed to read the prepared consent forms and voluntarily decide whether to participate. All participants I engaged agreed to proceed with the interview and signed the consent forms.

4.4.2 LUANAR support staff

Two LUANAR support staff from the office of the Director of Research and Outreach (DRO) and the Programs Coordinating Office (PCO) were interviewed. The two were purposively selected because of their overall oversight role on policy and implementation of research and outreach projects. As per LUANAR statutes, the DRO office was introduced as a policy and coordinating office for research and outreach work, while PCO is an implementing sub-office under DRO, specifically mandated to implement outreach interventions. Views from the two support staff shed light on how the university community partnerships are defined, valued, implemented and sustained from policy and practical perspectives. Further, perspectives on an ideal partnership, experiences and challenges met were explored.

4.4.3 LUANAR students (third-year students)

Ten (10) third-year students from the Faculties of Natural Resources and Development Studies were interviewed through semi-structured in-depth interviews. The third-year students were targeted because they were doing internship programmes with communities as part of fulfilling a college requirement for a four-year degree programme in their respective faculties. This allowed the study to benefit from current perspectives of students' partnership experiences. The internship programme involves students working with communities to apply knowledge from the classroom to real-world experience. I engaged the third-year students to understand their perspectives on existing and potential opportunities as well as their views on the functionality of partnerships. The dean's office provided a list and contact details (email addresses and phone numbers) of all third-year students working on climate change adaptation projects with communities. From the list, I purposively selected 10 students (five male and five female) based on the following criteria set: students with a community initiative within the targeted surrounding areas of Chiseka, Pondamali and Mkwinda, students undertaking initiatives that provided outcomes within the study period, students who were willing and available to accompany

the researcher to community sites. Consent forms were also read and signed by participants before the interview. Table 4.3 below provides a summary of the third-year students interviewed from the two faculties.

Table 4-2 Description of third-year students interviewed

No	***Interviewee pseudonym**	**Faculty**	**Department**	**Field of study**	**Gender**
1	Treeza	Development Studies	Extension	BSc Agricultural Extension	Female
2	Lucy	Natural Sciences	Forestry	BSc Forestry	Female
3	Chris	Natural Sciences	Forestry	BSc Forestry	Male
4	Suzen	Development Studies	Agriculture Education and Development Communication	BSc Agriculture Education and Development Communication	Female
5	Derick	Natural Sciences	Environmental Sciences	BSc Natural Resources Management: Land and Water	Male
6	Augustine	Development Studies	Extension	BSc Agricultural Extension	Male
7	Linda	Development Studies	Agriculture Education and Development Communication	BSc Agriculture Education and Development Communication	Female
8	Tryness	Natural Sciences	Environmental Sciences	BSc Environmental Science	Female
9	Japhet	Development Studies	Extension	BSc Agricultural Extension	Male
10	Robert	Natural Sciences	Agriculture Education and Development Communication	BSc Agriculture Education and Development Communication	Male
Total			10 third-year students		

4.4.4 Experts on climate change adaptation

The study engaged two renowned experts (both males) on climate change adaptation and university collaboration to provide their perspectives on university-community partnerships. The experts were drawn from two NGOs: the Civil Society Network for Organization for Climate Change in Malawi (CISONECC) and the Centre for Environmental Policy and Research (CEPA). Through research and advocacy, the two organisations lead climate adaptation research and advocacy, including providing insights on how stakeholders, such as universities, can support communities' climate adaptation efforts. The choice of the two organisations was primarily based on the following criteria:

i. Both play a crucial role in contributing to climate change curriculum development for universities.
ii. The two institutions carry the voices of all civil society organisations working on climate change.

Participants were contacted through an email from the directors of the two organisations.

4.4.5 Higher education and climate change policymakers

I obtained policymakers' views on university-community partnerships for climate change adaptation by engaging four (4) representatives. Views from policymakers were sourced from the Ministry of Education, Science and Technology (MoEST) (1), and the Environmental Affairs Department (EAD) (3). I engaged MOeST because they are regulatory bodies for higher education while EAD formulates climate change policies. Technical committee members on climate change are key stakeholders in the university curriculum development of climate-related programmes. Inclusion of policymakers' views was necessary given that policymakers regulate university programmes on climate change, a developmental issue that remains one of the government development priorities. A summary of policymakers is presented in Table 4.3 below.

Table 4-3 Summary of policymakers interviewed.

No	*Interview pseudonym	Institution	Designation	Gender
1	Mr Maziko	Environmental Affairs Department	Environmental office	Male
2	Mrs Lwazi	Environmental Affairs Department	Environmental office	Female
3	Mr Nkhalamba	Environmental Affairs Department	Environmental office	Male
4	Mr Kachingwe	Ministry of Education Science and Technology	Policy office	Male
Total		Four policymakers		

4.4.6 Local community stakeholders

Eighteen (18) local community stakeholders sourced from LUANAR's three surrounding areas, namely Mkwinda, Chiseka and Pondamali, also referred to as Extension Planning Areas (EPAs), were organized into three focus group discussions for interviews. I engaged community stakeholders because they have been in a long-term partnership (more than 10 years) with the university and are engaged in the partnerships initiatives. The community members were identified with the assistance of government extension workers and the support of village development committee leadership, using village development registers that were available at the EPAs. The selection of participants was based on the following criteria:

i. **Duration of participation and residency in the EPA** – the focus was on participants residing in the community for more than two years to be able to actively participate in the project interventions and able to attribute changes to the initiatives.
ii. **Registered project members –** the researcher was interested in only registered project participants because they undergo mentorship and accompaniment throughout the project period.

iii. **Rural poverty classification –** the researcher was interested in participants who fall within the ultra-poor[5] category based on the local vulnerability index (a local indicator of vulnerability to shocks). This implied targeting participants more susceptible to climate shocks.

iv. **Literacy –** the researcher opted for participants who had some formal education, with a minimum of primary school attendance, as literacy plays a significant role in access to knowledge (Harris, 2008).

A summary of the profile of community members interviewed is presented below.

Table 4-4 Profile of community participants.

No	*Interviewee pseudonym	Extension planning area (EPA)	Designation	Gender
	Focus group 1			
1	Mrs Gawani	Mkwinda	Member	Female
2	Mr Khasu	Mkwinda	Committee representative	Male
3	Mrs Majawa	Mkwinda	Member	Female
4	Mrs Nyamu	Mkwinda	Member	Female
5	Mrs Khoza	Mkwinda	Committee representative	Female
6	Mr Dziwe	Mkwinda	Member	Male
	Focus group 2			
1	Mr Mayani	Chiseka	Member	Male
2	Mr Mbale	Chiseka	Committee representative	Male
3	Mr Munthali	Chiseka	Member	Male
4	Miss Gawani	Chiseka	Member	Female
5	Miss Songezo	Chiseka	Committee representative	Female
6	Mrs Malata	Chiseka	Member	Female
	Focus group 3			
1	Mrs Mwale	Pondamali	Member	Female
2	Mrs Kasweka	Pondamali	Member	Female
3	Mrs Chipwa	Pondamali	Committee representative	Female
4	Mrs Msowoya	Pondamali	Committee representative	Female
5	Miss Assani	Pondamali	Member	Female

[5] Category of people unable to meet even the barest of basic needs- they are mostly food insecure, possess few or no assets and are mostly headed by women

6	Mr Kangola	Pondamali	Member	Male
Total		18 community participants		

While the study's site focus was LUANAR, participants' views from outside the university (community stakeholders, policymakers and experts) were necessary to investigate synergies between partnership policy and practice. The table below provides a summary of the participants interviewed in this study.

Table 4-5 Summary of all participants interviewed. Source: by author

Category	**Participants**	**Data collection**
University participants	Lecturers – 10, Third-Year Students – 10, Support Staff – 2, Total: 22	28 Semi-Structured Interviews, 3 Focus Groups (community members)
Non-university participants	Policy Makers – 4, Experts – 2, Community Members – 18, Total: 24	
Overall Total	**46**	**31 data collection sessions**

4.5 Data collection methods

Four main strategies were used to gather data for this study. These are document analysis, semi-structured in-depth interviews, focus group discussions (FGDs) and observations as described below.

4.5.1 Document Analysis

Document analysis in research entails gathering background information – history, philosophy and operations of the field under study. It is about accessing existing documents to determine which can help answer the study questions (Padgett, 2008). I started the document analysis process long before the actual fieldwork. Engaging with policy-related documents related to my study was one of the initial steps as I formulated the research questions. I kept reviewing the literature throughout the process to ascertain emerging issues and to enrich my study accordingly. Essentially, the document analysis was done with the following three intentions. First, to examine assumptions recommended by official university-community partnerships policies. Second, to identify

the existing partnership models universities and communities use during their interaction. Third, to observe whether the strategies/methods used by partnership actors are indeed those enshrined in the partnership policies.

Document analysis set the tone for the context of some of the empirical data I collected. For instance, reviewing the university strategic plan provided an idea of the university direction toward university-community partnership. The documents I reviewed include the Malawi 2063, Malawi Growth and Development Strategy 111 (2018), Guidelines for Technical Working Group for Universities in Malawi (2019), the Malawi Educator Sector Plan (2008), and the Malawi National Education Policy (2016), university reports, LUANAR Research and Outreach Grant Management Policy (2021), Directorate of Research and Outreach reports, LUANAR Programmes Coordinating Office, End of Year Outreach reports and the LUANAR Strategic Plans. At the field level (EPAs), I reviewed Village Development Plans for all the target sites and community registers to understand the underlying rationales and philosophies for community engagement with the university.

The process of document analysis involved conducting searches within various sources such as university strategic plans, village development plans, programme course syllabi, and government policy documents. This search aimed to identify specific terms related to university-community partnerships and climate change adaptation. I sought to understand the concepts and interventions associated with these topics by examining contextual references, word frequencies, and meanings. For example, I looked for terms like climate change adaptation, student outreach, community involvement, internship, local adaptation, community participation, and local knowledge and systems. This approach served two purposes. Firstly, it complemented the information obtained from interviews. Secondly, the themes that emerged from the secondary data helped shape the direction of subsequent interview questions.

4.5.2 Semi-structured in-depth interviews

Semi-structured in-depth interviews are verbal interchanges where one person, the interviewer, attempts to elicit information from another person by asking questions (Legard et al., 2003). Through the interviews, I explored respondents' views and perceptions regarding the operationalisation of the partnership to ascertain whether it is people-centred and addresses climate adaptation challenges (refer to the sample study

guide in the annexe). Cohen et al. (2011:409) view an interview as " an exchange of views between two or more people on a topic of mutual interest". The semi-structured, in-depth interviews allowed me to appreciate all participants' views on operationalising this partnership. As Stoffels (2004) argues, participants' responses provided triangulation to some issues observed during the proof of document analysis.

Based on the above description, I conducted 28 semi-structured in-depth interviews, which targeted lecturers (10), support staff (2), third-year students (10), experts on climate change (2) and policymakers (4). The interviews helped me explore and trace several key aspects of partnership features beyond what is stipulated in the policy documents. During each interview, I closely observed each participant's gestures and audio-recorded what the participants said concerning how the partnership unfolds both in theory and practice. To ensure that I remained focused and dealt with the researcher's preconceptions, I used the prepared interview guides (see annexe) to lead the discussion. This was in line with what Leedy and Ormrod (2013:154) advise: "Novice researchers often have greater success when they prepare a few questions in advance and make sure that all of the questions are addressed at some point during the interview." Before the actual interviews, I conducted trial interviews with selected participants at the university who were not part of the interview list. This was done two days before the start of data collection to pilot the interview process, refine my interview skills, and familiarise myself with the interview guide. During the actual interview process, I began with interviews with the lecturers. Based on availability, interview schedules varied. While some lecturers were easily accessible on campus, some interviews were conducted outside the campus at a venue proposed by the participants. This was because the timing coincided with the partial resumption of face-to-face classes after the COVID-19 pandemic. Regarding interview scheduling, three of the 10 lecturers preferred to be interviewed online due to the Covid-19 pandemic. Likewise, two of the four policymakers were interviewed via Zoom, but all students, experts and community members were interviewed in person. For the in-person interviews, I followed all Covid-19 preventive guidelines, such as keeping a 1.5-metre distance and using face masks and hand sanitisers as advised by the Malawi government.

During the interview process, I followed the interview guides and asked main, follow-up, and probing questions in line with the research objectives and responses flow (see interview guides in appendices C, D and E). For instance, the main questions broadly tackled participants' perceptions, focusing on reflections and views of the partnership in theory and practice. In contrast, follow-up and probing questions enquired into more in-depth detail and examples to cement the earlier responses. For instance, when I asked lecturers about the contribution of climate change adaptation partnerships to community well-being, their responses were general, using words such as economic well-being and healthier lives with no further reference to specific examples of the contributions. This prompted the researcher to probe further with follow-up questions on specific examples to justify the contribution. To ensure participants' focus and effective communication, I arranged for all face-to-face interviews to take place in private venues suggested by the participants.

The interviews were all recorded using a voice recorder, with pre-arranged approval from the participants. This complemented the field notes I took while conducting the interviews and provided rich detail of the responses during the data analysis process. Interviews with lecturers, policymakers and experts were in English, while community members' interviews were conducted in Chichewa, a local vernacular language. In terms of the duration of the interviews, each interview lasted approximately 60 minutes, which aligns with the recommendations of, at most, 90 minutes (Seideman, 2006).

4.5.3 Focus Group Discussions (FGDs)

Creswell (2003) defines FGDs as a participatory, interactive conversation on a particular case of interest, led by a facilitator, involving six to eight people. I used FGDs for several reasons. First, the FGDs allowed participants to reflect upon topics characterised by intricate behavioural and motivational patterns and situations involving participants with varying perspectives (Conradson, 2005). Thus, communities could interact openly as the discussion centred on themselves and not between the researcher and participants, with the latter playing the moderator role. The platform further provided the researcher with the opportunity to follow up on comments made by the participants more interactively to crosscheck the findings. Second, FGDs are perceived to be cost-effective in terms of time

and costs (Morgan, 1996); hence, I was able to collect data within the six months of the data collection period.

In conducting the FGDs, I followed the five steps proposed by Cameron (2010): determining the topic and goals of the FGDs, identifying potential participants, preparing a guide, selecting the location, recruiting participants, conducting the FGD and analysing the session. I describe the processes using the illustration below in Figure 4.1 below:

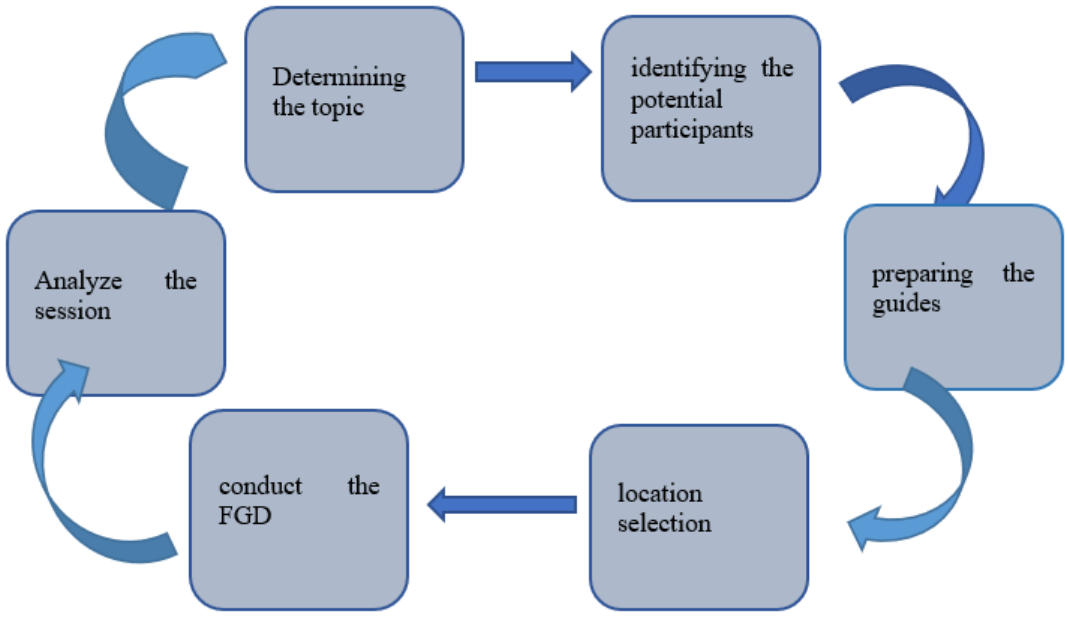

Figure 4-1 Steps on conducting the FGDs

Source: Adapted from Cameron (2010) and modified by the researcher

In light of the above, since the topic of the discussion was already known from the research questions, I proceeded to select potential participants using the criteria outlined in section (4.4.6). The chosen community participants had common characteristics that made them suitable for inclusion in the interviews. This corresponds with Wilkinson's (1998) and Richardson and Rabiee's (2001) discovery that FGDs typically involve individuals with similar traits, such as social and economic backgrounds, experiences, and enough information about the partnership to debate the discussion. In this study, the common thread among all communities was their engagement in adaptation interventions and their geographical locations and cultural backgrounds. Using the criteria detailed in

section 4.4.6, 18 participants were divided into three FGDs, each comprising six individuals. The smaller group sizes ensured that everyone had the chance to contribute, and the moderator (researcher) could effectively manage the discussions. Additionally, this reduced the likelihood of some group members dominating the conversation, addressing one of the criticisms of FGDs, as mentioned by Krueger and Casey (2009). Furthermore, considering the COVID-19 measures, smaller group sizes adhered to the Ministry of Health's recommendations for public gatherings.

Following the identification of participants, I compiled the interview guides comprising eight general questions. Unlike the structured semi-structured interviews with the lecturers, students, policymakers and experts, the FGD guides were more open and structured into sub-themes to stimulate participant debate. For instance, I asked communities about their motivation in attending partnerships, opportunities for adaptations and what they view as the partnership's contributions to their community well-being (refer to appendix F). These questions were broader but encompassed sub-questions, which stimulated communities to debate and express their views using concrete examples.

In regards to the selection of the interview places, all FGDs were conducted within the community setting, at a place chosen by participants. This ensured that participants were familiar with their environment. All the FGs were conducted in the local language, Chichewa, spoken by the participants. Two of the three FGDs were conducted near the demonstration plots, which allowed the participants to reference practical insights into the partnership. Being mindful of the novel Covid-19 pandemic, I provided all necessary personal protective equipment (PPEs), such as masks and sanitisers, in line with Malawi government guidelines on COVID-19 management at public gatherings. Further, before the commencement of the interview sessions, participants agreed on ground rules such as respecting diversity, not interjecting into each other's speech, to ensure that everyone had a chance to contribute freely and allowing a diversity of ideas.

Following the above process, I played the role of facilitator or moderator for a group discussion among community members rather than engaging directly with the participants. Unlike semi-structured interviews, I assumed a peripheral role instead of

being the main focus of attention while stimulating and guiding the conversation (see Bloor, Frankland, Thomas & Robson, 2001; Hohenthal, Owidi, Minoia, & Pellikka, 2015). At the end of the discussion, I analysed the session and engaged the participants to verify some of the key issues that came out of the discussion.

4.5.4 Observation

Observations were used as a fourth data collection strategy to gather evidence on the functionality of the partnership. Magwa and Magwa (2015:83) view observations as "observing behaviour and interactions as they occur but seen through the eyes of the researcher". In this case, the researcher attempts to study the behaviour of the respondents or the surroundings being analysed. Gold (1958) classifies the observation method into three categories: complete observation, complete participation and observer as a participant. Complete observation denotes non-participatory engagement with the respondent as the researcher observes from a distance. In contrast, complete participation implies interactive participation between the researcher and respondent, concealed by the researcher's role. Observer as participant happens when the researcher immerses themselves into the research, noting observations in the course of an interview. I adopted the observer as participant observation because it allowed me to get more acquainted with the respondents, check the accuracy of the responses directly from them, and make sense of the non-verbal behaviour exhibited by those who could not articulate themselves meaningfully. I only observed community participants present in their social setting to see and better understand and triangulate reality with what was said in the formal responses. With permission from the university authorities, I was allowed to accompany students for outreach programmes with the communities, observing their interactions with the community members at all sites.

In summary, data was collected using semi-structured interviews with policymakers, lecturers, experts, support staff and third-year students and FGDs were used to capture community views. The process of document analysis complemented the above methods as insights were used to cement the arguments or lay the foundation for generating more insights in the interviews. A summary of interviews and data collection methods is presented below:

Table 4-6 Summary of the interviews and data collection methods

Participants category	Number of participants	Data collection methods
Lecturers	10	Semi-structured interviews
Support staff	2	Semi-structured interviews
Third-year students	10	Semi-structured interviews
Policymakers	4	Semi-structured interviews
experts	2	Semi-structured interviews
Community participants	18	Focus group discussions

4.6 Managing data

4.6.1 Data transcription

Data from the semi-structured in-depth interviews and FGDs were audio-recorded, transcribed verbatim and typed in Microsoft Word. Despite the long and tedious process, it helped me get more familiar, faster, with the data, from which I could already start observing emerging themes. This process was followed by data cleaning, which involved carefully reviewing the transcripts to remove any grammatical errors resulting from typological mistakes and filling in gaps without necessarily changing the meanings of the content. A sample of transcript is captured in appendix G

4.6.2 Data analysis

In this section, I present a description of how the data was analysed. Thematic data analysis was conducted after transcription was completed. Bogdan and Biklen (1992:153) conceptualise data analysis as “working with data, organising them, breaking them into manageable units, synthesizing them, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others”. In undertaking the data analysis process, I combined the ideas of Dawadi (2020) and Braun & Clarke (2006), which provided a detailed description of the data analysis process. Dawadi (2020) builds upon Braun and Clarke’s (2006) framework, offering a more practical demonstration of each step, which I followed in conducting the analysis. The suggested methodology consists of six phases: becoming familiar with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and writing a report.

Phase one: Familiarisation with the data

To familiarise myself with the data, I was interested in understanding the types and number of themes that might emerge. Initially, I manually read all the transcripts in full to gain a sense of the participants' perceptions regarding the partnership operationalisation. Since I preferred to analyse the data manually, I read each transcript carefully to try to avoid relying on my prior knowledge and experience gathered while conducting fieldwork. I used different colour codings to highlight interesting information and cross-checked it with the research questions during this process. The primary objective of thoroughly examining the data in this manner was to completely engage with the entire dataset and gather initial points of interest (Chamberlain, 2015). By doing so, I gained a comprehensive understanding of the extent and scope of the dataset. Table 4-7 below provides an example of the process of data familiarisation.

Table 4-7 Linking the points of interest to the research question

Research question	Codes	Points of interest
What are the existing and potential opportunities for university-community partnerships to respond to climate change in Malawi?	Innovation, scaling-up efforts, high-impact technologies, knowledge production	34
What issues should be prioritised in these university-community partnerships for climate change adaptation in Malawi?	Relationship building, awareness, trust, equality, climate education, systems, managing expectations	31
How do university-community partnerships for climate change in Malawi contribute to human development for people in vulnerable rural communities?	Alternative income sources, strengthening local structures, multiple adaptation options	45
How can the human development paradigm inform the design of sustainable university-community partnership models for climate change adaptation in Malawi?	Ensure systems and strategies, involvement, adequate skills and knowledge	40

Phase two: Generating initial codes

Building on the familiarisation process, in which broader initial themes emerged, this phase involved re-reading the transcripts carefully while aligning the data with the research questions. This process facilitated the identification of keywords and technical terms that emerged in response to specific questions, which were then labelled as initial codes. The selected phrases and sentences representing university-community partnership domains were grouped together to identify possible themes. Refer to the example in the table below.

Table 4-8 Summary of data extracts and codes

Data extracts	Coded for
Working together can maximise the skills and knowledge to produce innovative technologies that can reach many people.	Scaling up impact
The community need structures to act as a bridge between the communities and the university.	Equality in the structures and systems
We realise that communities have diverse needs and may not want the same, so providing multiple options is to ensure the provision of diverse solutions from which they can choose	Provision of multiple adaptation strategies

Phase three: Searching for the themes

From the long list of generated codes, I initiated the process of identifying themes within the dataset. In doing so, I followed Braun and Clarke's (2006) approach of initially working with a comprehensive list of codes and gradually narrowing it down to specific ones. The primary objective of this process was to uncover patterns and relationships among the various codes (Chamberlain, 2015) to generate themes. In essence, this stage involves treating the codes as building blocks that contribute to the formation of themes. Braun and Clarke (2006, p. 82) highlighted that "a theme was anything important about the data

in relation to the research question and represented some level of patterned responses or meaning within the dataset".

Phase four: Reviewing themes

During this phase, the identified themes relating to my research questions were consolidated to refine the initially grouped themes and present them in a more organised manner. Following Braun and Clarke's (2006) guidance, the themes needed to exhibit coherence and consistency and establish clear links and distinctions between different themes. The process involves creating a thematic map, which shows the correlation between the coded extracts and the themes, considering the research questions and conceptual framework as the basis for identifying relevant themes. Thus, a coherent pattern was established to demonstrate the coded extracts into themes (Braun & Clarke, 2006). This process resulted in merging similar themes or discarding others without linkage to the research questions.

Phase five: Defining and naming themes

This process is about "identifying the essence of what each theme is about (as well as the themes overall) and determining what aspect of the data each theme captures" (Braun & Clarke, 2006, p. 92). As such, I collated the data extracts for each theme and arranged them logically and cohesively. I took great care in discerning the narratives presented by each theme and how they contributed to the partnership operationalisation, keeping in mind the research questions. Additionally, I minimised repetitions and overlaps between themes. Based on this analysis, I identified four main categories of themes that guided the presentation of the data. These are opportunities for climate change adaptation partnerships, priorities for partnerships to undertake, contributions of partnerships to community well-being, and imagined perspectives on a people-centred partnership for climate change adaptation. Identification of these four themes informed the presentation of a concise, coherent, and logical account of the analysis for this research.

4.6.3 Dealing with research rigour

The main criticism levelled against qualitative design is the aspect of trustworthiness. This is because data gathered through qualitative methods cannot be extended to broader populations with any degree of certainty, as working with small samples and methods is not aimed at testing findings to ascertain statistical significance (Ma & Olubunmi, 2019). To address this challenge, a researcher must demonstrate some level of validity and

trustworthiness to demonstrate the accuracy of the results. Trustworthiness in qualitative research is about establishing the following:

i. **Credibility –** the confidence in the truth of the study, often related to questions on how the researcher carried out the research to ascertain confidence in the results (Yin, 2003). It is concerned with doing the study in a way that enhances the believability of the findings. To enhance the credibility of this study, I used the triangulation method, which involves collecting information using multiple sources. The information collected using observations, document analysis, interviews and FGDs helped explain what Mertens (2005) identifies as rival explanations and determines the convergence of data.

ii. **Transferability** – the extent to which the research can be applied in other contexts with other respondents (Guba & Lincoln, 1994). Transferability often seeks to understand if the researcher could use the findings in another setting. Mertens (2005) says that the transferability responsibility often rests on the person interested in transferring the results rather than on the researcher. Despite this, I support Miller's (2008) argument that providing a clear description of the study, such as sufficient contextual details, ensures the transferability of findings in a similar context. Thus, I provided detailed contextual information on this study to accord reliability to the findings for transferability.

iii. **Confirmability –** the potential for congruency between two or more independent people regarding data accuracy, relevance or meaning (Mertens, 2005). Confirmability strives to establish that the data represent the information participants provided and that the researcher does not imagine the interpretations of those data. I increased the level of confirmability in this study by employing the triangulation method while also maintaining my positionality as a researcher. Further, the audio-recorded data were transcribed verbatim and cross-checked with selected respondents for an audit trail process, as advised by Carcary (2009).

iv. **Dependability** is the research data's stability over time and conditions (Guba & Lincoln, 1994). Yin (2003) indicates that it involves providing an account of all details, including changes during the research process. I enhanced dependability by providing a detailed account of the research design supported by the

triangulation process. During the interviews, I repeated the responses to ensure participants agreed with the responses I captured.

4.7 Ethical considerations

Ethics can be described as a code of morals/accepted beliefs that guide a person's conduct of an activity. Yin (2014, p. 77-78) advises that the researcher must protect participants from physical and psychological discomfort like unusual stress, embarrassment, or loss of positive self-esteem during observations, interviews, or any other activities the researcher and participants may be involved in during and after the data-gathering process. Since the study involved interacting with human beings, the following research ethics were considered and adhered to.

4.7.1 Permission to carry out research

Ethical approvals from the Economic and Management Sciences Ethics Committee at the University of Free State (UFS-HSD2021/1965/1276) (refer to appendix A).

4.7.2 Confidentiality and participants' anonymity

To ensure confidentiality and anonymity, I assigned pseudonyms and categorisation of study units such as LUANAR academic staff, policymakers and third-year students to lessen the chances of identification of participants. Further, the data generated was securely stored in the university laptop, with access only available to the researcher and supervisors.

4.7.3 Informed Consent and voluntary participation

All participants I engaged for this study were very accommodating and helpful during the entire data collection process. Before each interview, I verbally briefed them on the nature of the study and articulated expectations from both ends. As Bryman (2012) advises, participants need to be sufficiently conversant with the study expectations to choose to willingly participate or not willingly participate. I emphasised voluntary participation and willingness to withdraw at any given point without giving any reason and further requested the signing of consent forms before each interview (Refer to appendix B).

4.8 Study limitations

Firstly, while the study focuses on university-community partnerships for climate change adaptation, it did not directly involve donors who finance specific partnership initiatives to gain insights into their perspectives on the relationship between universities and

communities. While this would have been beneficial for fostering accountability and transparency, reaching out to donors was not feasible within the practical limitations of the study, mainly because many of them do not have a physical presence in the country. Nonetheless, the primary focus of the study was to comprehend the partnership between the university and communities, and the insights derived from the government, which works hand-in-hand with donors. Further, current literature and my experience with climate adaptation issues contributed valuable information to the research.

In regards to dealing with fieldwork, the biggest challenge was that I started the data collection later than initially planned because of delays in accessing ethical permissions. My final modifications for the UFS ethical period took a long time to be reviewed because they coincided with the 2021 end-of-year break. Even though I started the data collection behind schedule, I was able to catch up and finish all interviews. This was feasible because, as a single case study, the majority of the participants for the study were situated in the same geographical area, except for policymakers and experts.

During the actual data collection, some lecturers expressed unwillingness to participate in the study because they had just resumed a new academic year and were tied up with meetings. However, I made follow-ups with them at their offices and appealed, on the basis of the importance of this study to them and the institution. Further, I relied on the informal networks I created as a former university student to reach out to academics and persuade them to participate in my study.

Access to secondary data at the community level presented another challenge in accessing the documents related to the university interventions with the communities. This was due to poor documentation, filing and, in some cases, community members needed approval from senior community leadership. However, I was able to go through some of their records which provided insights into their participation in interventions.

Also, the Covid-19 pandemic presented a significant threat to the availability of participants and scheduling of interviews due to government restrictions on public gatherings. However, I was able to adhere to all guidelines regarding COVID-19-approved measures for gatherings in a public space. Some lecturers opted to be interviewed online,

and meetings were conducted via Zoom and Google Meet platforms. On one occasion, I had to redo an online interview because the connection was poor.

4.9 Conclusion

This chapter aimed to provide a detailed account of this study's research design and methodology. It described the research paradigm, participant selection, data collection methods, analysis, ethical considerations and limitations encountered during the research process. Key takeaways from the chapter are that in terms of design and approach, the study adopted a qualitative case study design, using the constructivist research paradigm to explore the nature of university-community partnerships for climate change adaptation. Data was collected through semi-structured in-depth interviews, document analysis, FGDs and observations. The next chapters (five, six and seven) present offer a detailed description of these findings, which are presented thematically.

Chapter 5： Motivations for and successes of existing climate adaptation partnerships

5.1 Introduction

This chapter captures participants' voices on the motivations and successes of existing for climate adaptation partnerships in Malawi. The findings described in this chapter respond to the first research question on the motivations and potential opportunities for climate adaptation partnerships. Understanding the motivations behind these partnerships is crucial as it helps identify the driving forces that lead to their establishment and success. Further, findings on the successes of existing climate adaptation partnerships in Malawi should be celebrated because they demonstrate the effectiveness and potential of collaborative efforts in addressing climate change impacts. Views discussed in this chapter are drawn from lecturers and support staff, policymakers, third-year students and community participants. These groups were interviewed through semi-structured in-depth interviews, except for community participants who were organised in FGDs. The profile of the participants and justification for their inclusion has been explained in detail in Chapter 4.

Comprising two sections, this chapter is organised as follows: after this introductory overview, the first section delves into the motivations behind participants' engagement in adaptation partnerships. Secondly, the chapter discusses what existing partnerships can contribute to sustainable community well-being. This is followed by a conclusion of the main arguments.

5.2 Motivations for partnerships on climate adaptation

To capture the motivations of the current partnerships, the questions focused on understanding the driving factors behind participants' involvement in the partnership. The questions posed to participants were centred on their insights into the formation and objectives of climate adaptation partnerships. The general responses from these interviews provided valuable context, highlighting themes such fulfilling civic responsibility in addressing emerging societal challenges, enriching students' preparation for

adaptation work, knowledge co-creation and opportunity for financial rewards. These overarching themes serve as a foundation for the more detailed discussions that follow below.

5.2.1 Fulfilling civic responsibility in addressing emerging societal challenges

More than half of the lecturers reported that the university collaborates with communities on climate adaptation as part of its academic responsibility to act as a government agency tasked with addressing societal challenges. A critical aspect of this reflection is the understanding that through partnerships, the state-funded institution contributes to community well-being and poverty reduction, which are key national priorities enshrined in Malawi Vision 2063[6]. This is how Mrs Nkhoma (lecturer) put it:

> Since the country heavily relies on agriculture as the main source of gross domestic product, LUANAR was instituted to help address agriculture-related challenges such as climate change among rural communities. This college was introduced in 1961 to specifically provide manpower to the agriculture sector, which was then identified as the main driver of the economy.

The excerpt above exemplifies what others have described as universities' societal transformation role, encapsulated in their ability to support communities and promote social and economic development (Fongwa et al., 2020; Teferra, 2008; Lulat, 2003). In this case, we see LUANAR aligning its mandate towards agricultural productivity as the economy's key driver. This understanding echoes Kofi Annan, former Secretary-General of the United Nations, who said that "the university must become a primary tool for Africa's development in the new century" (Bloom et al. 2006: 2). Similar views are expressed in Ernest Boyer's (1990) idea of viewing a university as intrinsically linked to the society, expected to undertake an integral role in the welfare of the society. The excerpt is also consistent with the notion of the post-independence developmental role of African universities, which challenged universities to address societal needs through their primary functions of generating and disseminating knowledge and fostering strong communities (Court, 1980; Yesufu, 1973). Thus, in partnering with communities, the assumption is that

[6] Malawi Vision 2063 is the policy guidance document that stipulates the vision of the country in terms of the development trajectory that Malawi wants to achieve by the year 2063

universities ought to impart skills and knowledge to empower and stimulate communities' capacity to engage in decision-making activities that improve their well-being.

All lecturers said that the university is mandated to provide solutions for climate challenges affecting communities, with an understanding that the university is also part of the community. One of the lecturers explained that LUANAR "holds the key to supporting transformative solutions to communities amidst climate crisis, hence the need for local partnerships" (Mr Tolani, senior lecturer). Such views denote a commitment from the university to engage with communities in providing adaptation strategies that meet specific, localised needs. Further, the views resonate with the 2021-2022 Human Development Report (HDR, which reaffirms that a transformational response is necessary for both people and the planet to flourish amid uncertain transnational threats such as climate change (UNDP, 2022). Thus, engaging in partnerships with local communities to create transformative adaptation solutions would involve leveraging the skills and knowledge of the community, thereby demonstrating optimal resource utilisation that aligns with the efficiency principle of the human development approach. As Dutta (2011) argues, efficiency is demonstrated when productivity is maximised while utilising the least costly resource.

On the other hand, support staff further regarded LUANAR as a research, technology, and innovation hub present within a community tasked to address community problems on climate change. An excerpt below reaffirms this notion:

> Our mandate requires us not only to teach and carry out research but also to work directly with partners and communities to support rural agro-based communities. That's why all our programmes provide room for students to partner with communities as part of learning but also help them address challenges related to agriculture and natural resources. So, we can't talk of LUANAR minus communities. (Mr Jimu, support staff)

The excerpt above aligns LUANAR's efforts with its mission statement, as described in Chapter 4 on addressing agro-based challenges as a way of contributing toward national development. LUANAR's mission is also in line with the national policy frameworks of Vision 2063 and the Malawi Growth and Development Strategy III (MGDS 2017-2023). We see this manifestation in the university's emphasis on the scholarship of engagement,

a concept Fongwa et al., (2022) define as a new interactive way of engagement between university and community aside from teaching and research functions. While applauding the university's commitment to outreach work, an interview with the LUANAR Directorate of Research and Outreach revealed policy gaps in the partnerships emphasis in the newly approved 2021 Research and Outreach Grants Policy:

> Much as the mention of the partnerships is not recurrent in the outreach policy, we take it that by advancing outreach, the assumption is that the outreach activities will be implemented through several strategies, such as partnerships, which we expect staff and students to establish with communities. (Mr Jimu, support staff)

To stay in line with the needs and current demands of the community engagement mission of the university, LUANAR approved this policy, which guides the operationalisation of grants and outreach work. However, despite partnership being central to outreach work, a review of the policy shows that partnerships with communities on climate change adaptation do not feature much within the broader scholarship of engagement agenda. Given that partnerships guide the outreach functions of the university to a significant degree, we see less promulgation of the partnership component in terms of policy guidance. As noted from the excerpt above, Mr Jimu assumes that partnerships feature as an approach to outreach, but with less detail on operationalisation. Eventually, such a reduction in focus implies reducing partners' commitment to engaging in a mutualistic partnership that spurs reciprocity. The excerpt above further suggests elements of commitment and political will from LUANAR's perspective to enhance mutual benefits and reciprocity. As deduced earlier from Mrs Nkhoma, the provision of room for such partnerships is necessary for the mutual benefit of both students and communities. This is evidenced in students benefiting in terms of undergraduate formation, while communities strengthen their skills and knowledge, as imparted by the students adapting to climate challenges.

While acknowledging LUANAR's quest for this community engagement role, lecturers were quick to admit that the university does not show a consistent commitment to the adaptation partnership component as it is mostly viewed as a support function to the teaching and research roles. Consider the excerpt below in which Mr Tolani (lecturer)

explained that teaching and research supersede the partnership functions and the latter is mostly viewed as the supporting arm of the two functions. This is how he puts it:

> First, we need to teach and conduct research…. then constantly engage with communities to improve our teaching and research portfolio. Mostly takes much time because the university opened up to more intake, which means we are mostly overloaded with teaching functions.

Mr Tolani's thinking is not new in university-community partnerships literature. Eminent scholars such as Bidandi et al. (2021) and Hall et al. (2015) observed less focus on community partnerships in comparison to teaching and research, attributing this to disparities in power and privilege. They argue that by the mere fact of possessing power and privilege, universities display and uphold their superiority towards communities, largely viewing them as training and research grounds. From a human development perspective, this observation contradicts human development principles as it limits and undermines communities' contribution, eventually creating power imbalances.

Related to this view, the study findings show differences in respondents' understanding of the university's role in supporting communities. More than half of the respondents, mostly community members who did not hold any position, viewed LUANAR's support as a favour to them. In other words, community members involved in adaptation activities felt privileged to be involved:

> We do not think they owe us anything. All we know is that we are privileged, unlike other communities where people from the university, including students, come to teach us various methodologies on agriculture and climate change and other subjects. (Mrs Gwazani, Mkwinda)

On the contrary, community members who held positions within the community, such as village development committees, who serve as entry points between the university and communities, reported being aware of LUANAR's role in addressing societal challenges:

> I know why LUANAR partners with us, including how they select areas to work with. We are always reminded of this when holding our interface meeting during inception meetings or training sessions. (Mrs Nyamu, Mkwinda)

From the policymakers' perspective, the local community has a limited understanding of LUANAR's role. In addition, policymakers believe that the university takes advantage of this limited understanding to exert its influence on adaptation processes. They attributed this to social-economic factors such as poverty, rurality and low literacy levels, which create power imbalances and deprive communities of the ability to negotiate and acquire relevant knowledge on their expected role. Irrespective of policymakers' views, Mrs Gawani's and Mrs Nyamu's views provide some contrasting insights regarding their awareness of LUANAR's role in supporting communities. As can be seen from the excerpts, community leaders such as Mrs Nyamu sounded more knowledgeable, recognised, and empowered than those without positions like Mrs Gawani. Such revelations relate to equity in human development terms, which takes a broader view of ensuring fairness in accessing opportunities to flourish (Mutero & Govender, 2019; Preece, 2013). Ideally, partnerships should create inclusive environments that facilitate the acquisition of knowledge by not solely confining it to community leaders. This approach ensures that all members of the community are equipped with information, enabling them to make well-informed choices regarding their engagement in adaptation interventions. Ensuring equity in partnership has implications for enhancing agency, participation and empowerment for students and human development, as will be discussed in the next section.

5.2.2 Enriching student preparation for adaptation work

As a teaching and practical university, LUANAR interviewees explained that LUANAR's quest for partnerships is motivated by the desire to produce capable graduates with relevant skills for advancing climate adaptation work. This view was generally held by lecturers who teach climate change courses and double as outreach coordinators. The lecturers emphasised that practical experience enriches students' application of theory and practice:

> We adopted a mentorship programme within the four-year undergraduate training that allows our students to acquire hands-on experience while working with communities, let's say, for three to six months. They work with the farmers, while we, as teachers, offer accompaniment support for guidance in case they meet challenges. (Mr Moyo, lecturer)

Deducing from this excerpt, the application of theoretical aspects into practice is conceptualised as ideal for graduates' preparedness for adaptation work. Community experience offers students outdoor learning skills that prepare them to work better with communities (see Boni and Velasco, 2019; Walker & Fongwa, 2017; Nkhoma, 2015; Bell et al.2009; Sandmann, 2008). In Malawi, as Mazinga (2021) and Nkhoma (2015) noted, community engagement is meant to prepare students' disposition to understand emerging challenges and propose solutions for communities.

In the same manner, third-year students shared that their personal and professional objectives drove their engagement in partnership interventions. For instance, students shared that involvement in community partnerships improves their comprehension of climate adaptation issues and "opens avenues for rethinking the relationship between university and communities*" (*Japhet, third-year student*)*. This is an example of what Boyer (1990) calls scholarship of engagement, in which students should be challenged to leverage their academic knowledge to create mutually beneficial ways that have a significant impact on the community. Students shared that adaptation partnership avenues offer them opportunities to express themselves better and innovatively. For instance, seven out of 10 students described working with communities as an ideal space for enhancing innovation skills in a natural climate setting. This is how one of the students put it:

> It is an opportunity for me to apply the theoretical aspects of climate change we learn in class and gauge how they resonate with reality. This platform brings reality aspects on what to anticipate and how to handle climate issues on the ground and subsequently helps communities develop solutions (Treeza, extension student).

While Chris (forestry student) concurred with Treeza and further treasures the leadership and management skills gained while working with communities, he feels students are not adequately prepared for adaptation partnership work. He cited the short time spent with communities as inadequate to gain practical knowledge and better prepare them for climate adaptation outreach work. He says:

> We love working with communities, but we spend like three to four months with them only is not enough. I think it's best there is a 50-50-time allocation to theory

> and practical work so that we are well prepared for employment (Chris, forestry student).

Appreciation of outreach work was expressed by all 10 students interviewed. As Chris and Treeza concur, outreach provides a foundation for understanding adaptation issues in real-life contexts. However, Chris's concern is about how long is spent on outreach work, which relates to the principle of efficiency in the human development paradigm. He feels more time should be allocated for partnership engagement as it provides invaluable experience and prepares students for skills acquisition and employment.

Concerns about field time allocation were also evident in community members' voices, as captured below:

> I think they need to allocate more time to practical work. We can also help the students interact with us because we can easily point out that student A engages better with us than student B. (Mr Mayani, Chiseka)

Aside from the field time allocation issue, four community respondents in Pondamali expressed discontentment with the lack of proper student engagement with communities, suggesting that students should spend more time with communities to familiarise themselves with the demands of being a rural development extension worker:

> Some of the students do not fit the profile of extension workers, they are better placed working in offices. Do they know that they are going to work with farmers? they come here folding their hands, putting their hands in their pockets. How can they help us when they put their hands in their pockets? (Mrs Khoza, community member)

Much as the community observations on the need for more time need to be explored further, the variation in student abilities would also imply that students are not well prepared to get into community engagement work or they lack the agency to stimulate communities' interest in undertaking adaptation interventions. To borrow Alkire's (2008) framing, lack of interest defeats individual and collective agency, which in this case would result in communities feeling inferior to university students. In human development terms, the power disparities perpetuate inequalities, as also observed by Fongwa et al., (2022), which in turn suppress communities' contributions. Of special mention is the aspect of some students displaying some elitism, which also resonates with Mazinga's (2021)

assertion that negative attitudes toward rural development work and preference for white-collar jobs affect universities' and communities' engagement efforts. Thus, the study builds on his findings to suggest that the preparation of students for adaptation work should integrate practical ways of stimulating students' agency for climate adaptation work.

For communities, their interest in engaging in partnership interventions was twofold. First, they expressed a desire to support students' formation process. In all the FGDs, sentiments about the community's desire to input ideas into the student training process came out. The excerpt below provides evidence:

> We treat them as our children and aim to ensure they succeed. However, given a chance, we can also help the students interact with us better because we can easily point out that student A engages better with us than student B. (Mr Mbale, community member)

In Mr Mbale's excerpt, two issues emerge. On the one hand, we see communities expressing their desire to support students in achieving academic goals without making specific reference to their adaptation goals. Their willingness to participate in the process shows an inner desire to empower students in their formation process. On the other hand, communities expressed agency in offering support to LUANAR in training students on outreach work. This proposition suggests a gap in the principle of efficiency within the human development paradigm, as the community's resources are underutilised in the students' partnership formation process. Further, it contradicts the principle of active participation and empowerment, which would contribute to aligning the curriculum and pedagogical approaches to community needs. As Preece (2013) contends, in the quest for the notion of Africanising knowledge and scholarship, examples such as Julius Nyerere's efforts to include village communities in students' outreach assessment provide practical examples of how communities can be involved in the scholarship of engagement. However, in this case, students are denied invaluable community perspectives on how to better undertake adaptation partnerships. Aside from supporting students' preparation, knowledge production is a key driver in creating partnerships. The next section discusses knowledge creation motivation in detail.

5.2.3 Knowledge creation, exchange, and scholarly recognition

The study findings indicate that partnerships go beyond breaking boundaries between universities and communities on climate adaptation issues to include formal and informal expertise exchange between community and university counterparts. Lecturers (eight out of 10) indicated holding both formal and informal meetings with communities to understand underlying climate threats threatening well-being in an attempt to apply for external funding and generate knowledge for solving identified solutions. Citing a project that was aimed at commercialising local drought-tolerant vegetables, Mrs Gama (lecturer) explains that the steady rise in demand for Amaranthus (a resilient and highly nutritious local vegetable) in Malawi, as a valuable source of food during emergency climatic threats and its inclusion in climate change resilience strategies necessitated a study to develop Amaranthus varieties, which did not previously exist. To develop the seed, LUANAR partnered with communities whose role was to collect the required clear phenotypic descriptors[7] of plants for breeding as a way of meeting seed standards that ensure quality seed production. The communities' role involved assembling the required seeds using a set of prescribed criteria, grading, and mounting demonstration plots to conduct trials on their farmer field schools as a way of understanding the adaptability of new varieties to climatic conditions:

> We didn't have any released varieties as of 2021, partly due to a lack of phenotypic descriptors of accessions. With support from communities, we collected the needed uniform plants for breeding through a project that was a success and even got journal publication in an American journal. (Mrs Gama, lecturer)

Generating such new knowledge and products proved rewarding for academic lecturers. As knowledge is being created, lecturers gain recognition for academic excellence, which are prerequisite factors for job promotion and security. Like most universities, LUANAR weights research outputs more than teaching (Nkhoma, 2015; Nalivata, 2014). Lecturers hold the view that the sustained pressure for publications and the prestige of being cited by other scholars drives their passion for partnerships with local communities. Specifically for young lecturers, scholarly recognition was viewed as a way of establishing themselves in academia:

[7] Refers to observable traits in plants

> When I started working here, publishing was not held in high esteem for young lecturers until the department set individual targets. Previously, it was viewed as a task for established lecturers. But when I met one of the long-serving members, I was encouraged to publish early in my career. My first article received many comments from reviewers, but eventually, I was guided through it, and my paper was accepted. That is the joy of publishing, seeing your name out there and getting other scholars to refer to your work. (Mr Mtaya, lecturer)

For Mr Moyo (lecturer), the knowledge creation aspect extends beyond academic publications to include policy publications, mostly commissioned by the government or donors. He says such assignments necessitate partnering with communities to ensure the credibility and transferability of findings:

> Most consultancies require field data to demonstrate that findings are evidence-based. In that case, one is required to continuously engage with the community to validate the findings. Same with the presentation of funding, some donors allow the inclusion of community members to narrate their issues at high-level meetings, especially when the research was aimed at lobbying for a policy with the government. (Mr Moyo, lecturer)

Although the commendable act of generating knowledge takes place, it is imperative for this knowledge to effectively reach its designated recipients, who, in this instance, are community members. The objective is to have an impact on their decision-making processes concerning climate adaptation. To facilitate the dissemination of knowledge within communities, LUANAR has undertaken measures to improve the approach to scientific communication. This initiative was made in recognition of the fact that despite science communication gaining scholarly prominence, progress in Africa, especially in sub-Saharan countries like Malawi, is lagging (Trautmann & Monjero, 2019). Therefore, science communication is considered key in building skills and knowledge for rural communities' resilience to climate shocks. According to the students, cultural variations and demand for knowledge valorisation, platforms such as student clubs, community radio listening groups and farmer forums take centre stage in sharing research findings and further cascading information down to community grassroots structures. Consider the views below:

> Our weekly interface programmes as a horticulture club are meant to update communities on what is new on climate adaptation, monitor progress on agreed

> targets and most importantly, receive feedback on last meeting action points. (Tryness, environmental management and science student)

Regarding the target audience, lecturers said that science communication initiatives mostly target the youth as they show more interest in climate change entrepreneurial interventions. Youth interest in climate change economic interventions as a form of employment relates to UNESCO's calls that "the promotion of a culture of science, of technological skills for young people, in particular ... have a potentially significant impact on [African countries'] youth capacity building and employability" [UNESCO 2020, p.231]. Mrs Mwale (lecturer) said:

> The youth are the ones who show more interest in interventions such as beekeeping and bamboo production. We take advantage of such interest to facilitate knowledge flow using their clubs.

From the excerpt in this section, we see how the desire to generate new knowledge and to contribute to scholarly literature within the academic and social spheres motivates LUANAR to partner with communities. For instance, Mrs Gama's quest for a scholarly contribution towards new knowledge on Amaranthus drove her passion to work with communities. This confirms Jonson and Lesser's (2015) findings that curiosity motivates staff to research emerging phenomena. Consequently, publication motivates lecturers to partner with communities. From a human development perspective, the quest for evidence-based publications and the inclusion of community members in lobbying forums implies genuine participation and empowerment between universities and communities. As for Mr Mtaya, knowing that his work was cited offered him encouragement, satisfaction, and motivation to undertake more research and climate adaptation. Capitalising on youth energy and enthusiasm for climate change adaptation to facilitate information flow from university research findings to communities shows partnership alignment to the principle of efficiency, as the university demonstrated the need to optimise existing pathways as channels for information flow.

Despite the university's forefronting coordination with communities in knowledge creation, communities' take on reciprocity remains a contested space, thus providing an opportunity for critical reflection that could provide valuable insights into the principle of equity in the partnership. Communities said they lacked influence in the selection of

research topics and expressed dissatisfaction about feeling exploited due to the unequal power distribution within the partnership. Consider the views below:

> We participate in the process but have no control over the choice of areas to be researched on. (Mr Dziwe, Mkwinda)

Likewise, Mr Munthani (Chiseka) shared that the linguistic barrier impedes the transfer of knowledge from universities to communities.

> We just follow what we have to do; some of the words are hard for us to understand.

Regarding access to information, communities explained that they lack access to academic publications, policy papers, and other scholarly resources due to a lack of comprehension of the language, as the publications are not in vernacular.

> The truth is that most of us don't understand their language, so it is difficult even to start asking. They come and collect information, and all we care about is that whatever they write benefits us in the end. Some students explain some things to small clubs, but very few people access them. (Mrs Kasweka, Pondamali)

The excerpt above suggests that much as students were credited for disseminating research findings such as new technologies to communities, the process exhibits a top-down approach. This neglects the opportunity for communities to provide feedback, ask questions and engage in dialogue. Equally, sentiments shared by Mr Dziwe and Mrs Kasweka highlight equity gaps between the university and community in the knowledge creation and dissemination process, as communities seem to not fully enjoy the benefits of the process.

5.2.4 Opportunities for financial rewards

The significance of financial rewards in motivating university staff for climate adaptation interventions emerged strongly among lecturers. The study findings reveal some inclination towards financial gain for university participants as a reward for their involvement in partnership activities. By financial rewards, I imply individual monetary incentives offered by the university to staff for their participation in partnership interventions. To emphasise this, one lecturer said:

> We cannot deny that individually, we also benefit from the research expenses budget. So, when opportunities for working with communities arise, one can make some savings for personal use from the research expenses budget. (Mr Mtaya, senior lecturer)

Similarly, Mrs Nkhoma (lecturer,) explained that with the country's challenging economic conditions, she could make some savings from the field allowances to support her personal needs.

> I have lots of economic needs, and sometimes, it pushes us to work hard on such interventions beyond our normal teaching functions because we can get something to support our daily livelihoods. It is not much, but it still makes a difference.

The excerpts above highlight that while partnerships are a key component of the university function, the opportunity to earn extra income incentivised university staff to allocate time for partnership interventions. The excerpt resonates with Mtawa et al.'s (2016) findings in the Tanzanian context that academics are motivated to engage with various stakeholders and the government due to low salaries and insufficient government support for engagement activities to secure additional earnings. As can be seen from the two excerpts, the extra income helps the staff navigate their financial hardships, evidenced by what the lecturers called an insufficient monthly salary. For example, between 2017 and 2019, LUANAR staff went on several indefinite strikes demanding harmonisation of salaries with their counterparts at other public universities, who they say earn more (Chitete, 2019). Adaptation partnerships, therefore, serve as an opportunity for staff to make extra income. While this finding contradicts Nkhoma's (2015) assertions that financial incentives were not a primary motivation factor for faculty members undertaking community engagement scholarship in Malawi, this study found contrary evidence suggesting that financial gain was key in influencing staff decisions to undertake university community climate adaptation partnership work. Arguably, this could also be attributed to the need to sustain outreach office operations offices which mainly depend on donor funds. While the use of incentives has been seen as an important motivation to induce participation, Danish (1990) argues that the culture of allowances can result in sustainability and ownership challenges beyond the project phase. Although the study does not delve further into the effectiveness of allowances as motivation for climate

adaptation partnerships, reflections from above could signal commitment and sustainability challenges in the absence of incentives.

Additionally, at the university level, the motivation to undertake adaptation partnerships enables the university to benefit financially from external grants which support the running of the outreach office. Over half of the lecturers (7 out of 10) said that most partnership programmes operate under the banner of external grants since the university has limited funds for outreach:

> As for the programme coordinating office's history started with the connection with the Norwegians. And ever since its existence, it has largely been funded by the Norwegians. (Mrs Nkhata, support staff)

The above excerpt confirms LUANAR's adaptation interventions are mostly dependent on external donor funds. Over-reliance on donor funds to run partnership programmes raises concerns on the principle of sustainability within the HD paradigm as the operations would be paralysed in the absence of external funding from the Norwegians. Nalivata (2014) previously discovered that most partnership innovative work conducted by LUANAR is donor-driven and faces challenges of continuity in an era of declining developmental assistance. Such observations echo Tennyson's (2015) concerns that most donor-funded partnerships are often reactive in addressing climate challenges but rarely transformative in approach, leaving behind a limited impact on communities. In the context of Malawi, and by extension most sub-Saharan African countries, reactive approaches to climate adaptation programmes raise questions such as whose agendas these partnership programmes advance, including the associated implications of ownership, sustainability, and accountability.

Intertwined with the challenge of LUANAR's increased dependency on donor funds, is the threat to LUANAR's autonomy as possibilities of deviating from university strategic orientations are certain in the context where funders' interests change. Such deviations risk ignoring the original approach to people-centred ideologies in preference for funding availability. Mrs Nkhata (support staff) explains:

> ...when donors decide to change strategic orientation, which may not be of great interest to the university, sometimes we are forced to align ourselves to the prevailing

> demands even when the strategic plan less prioritises such, why? Because without the donor funds the offices will close and staff will not be able to get allowances.

Views expressed above suggest a threat towards institutional autonomy in the absence of funding. As can be deduced from Mrs Nkhata, the programmes coordinating office operations are hugely dependent on external funding from donors. It follows that in the case of a funding drought, LUANAR will not be able to run partnership programmes.

While the above motivation factors act as push and pull factors affecting both the university and community perspective decisions for undertaking partnership interventions, the study further explored the potential of existing partnerships, which will be discussed next.

5.3 What existing current climate adaptation partnerships can enable

All participants spoke about the importance of an enabling environment to achieve certain outcomes. It is clear that the existing partnerships already provide an environment that enables uptake conditions for certain climate adaptation strategies. In particular socio-cultural acceptance, spaces for policy and planning support, as well as the pooling of resources are factors that support such an enabling environment. It is important to acknowledge what existing partnerships are well placed to achieve, before discussing what they fail to do. Doing so serves as a backdrop for the normative descriptions for future partnerships which are later theorised in Chapter 8. In the next three sections, a detailed discussion is provided of the factors that make existing partnerships enabling.

5.3.1 Social cultural acceptance and empowerment

Participants from LUANAR explained that the existing environment creates opportunities for university participants to be accepted and integrated into the community dynamics. Participants valued social-cultural acceptance from the communities as a space to capitalise on and expound on their skills in advancing several adaptation strategies. Suzen (development studies student) explained that communities' warm, welcoming gestures trigger a sense of belonging and social inclusion:

> Some communities dance for us, provide us with food, and we are treated as kings – something I have never experienced in my life. It makes you feel welcome and part of the community.

In the same manner, community participants shared that partnership initiatives strengthen relationships with university stakeholders, thereby opening a platform for them to create adaptation strategies and support the identification of local barriers to climate adaptation:

> Our training sessions are done at demonstration plots where we test out new technologies with the support of extension workers. We are given the chance to ask questions and contribute ideas on how best some components of adaptation can work. In the end, the interventions are accepted because we include our opinions too. (Mrs Mwale, Pondamali)

The excerpt above highlights the opportunity that demonstration plots offer community members to acquire climate adaptation skills. As Mrs Mwale says, demonstration plots offer space for communities to participate, connect, and share experiences. It is worth noting that during demonstration plots, participants are in smaller groups, about 8 to 10 people with at least 50-50 representation of males and females to address power imbalance and inequalities. This means the partnership offers fairness in community representation and space for community input, which aligns with the HD pillars of equity and participation and empowerment. Further, such categorisation illustrates a commitment to creating varied spaces for empowerment and transformational opportunities as community views in partnership interventions foster ownership and sustainability.

5.3.2 Policy and planning support

Participants explained that an enabling environment could create space for meaningful conversations between the public and duty-bearers on climate adaptation actions, contribute toward the policy formulation process and lobby for support from the government and other stakeholders for climate action. Two of the four interviewed policymakers underscored the relevance of community members' input in policy consultation processes. They acknowledged the platforms university-community partnerships create as a medium for such exchange. Policymakers' emphasis on LUANAR and communities partnership was to create local movements on climate adaptation, which would act as input channels for consultations on policy formulation:

> The university can strengthen the dissemination platforms at the local level, such as field visits and demonstration plots, or create local groupings conversant with climate knowledge, which can be used as entry points for policy dialogue and consultation. (Mr Maziko, policymaker)

Likewise, one of the policymakers said that universities have the potential to seek community views that would inform the formulation of climate adaptation policies and strategies that combine scientific research with indigenous knowledge.

> It is an opportunity to address the huge gap in acknowledging traditional knowledge in our policy documents. With the resources at their disposal such as laboratories, universities can create such platforms to solicit traditional knowledge and suggest ways in which such knowledge can be complemented with scientific knowledge. (Mr Nkhalamba, policymaker)

The above excerpts highlight the significant role that universities can play in collaborating with local communities to promote advocacy and bring about social policy change. Although the government also conducts consultations with local communities for policy development, their ability to test the efficacy of traditional knowledge is limited compared to universities, which possess relevant expertise in bridging traditional and scientific knowledge. For example, communities' use of Neeme leaves to treat fall armyworms would require scientific testing to determine the recommended application guidelines. As a result, universities are best suited to solicit feedback from local communities that can inform the development of policy documents and strategies.

The findings further collate with literature on the necessity to integrate community views in climate adaptation initiatives. As can be seen from the Mr Maziko excerpt, integrating community voices in planning and mitigation efforts at both policy and implementation levels can reduce climate risks that derail rural communities' well-being. In human development terms, the inclusion of community views relates to the principle of equity, which, according to Alkire (2010), implies advancing fairness in exercising opportunities.

5.3.3. Pooling valuable resources

Participants explained that universities possess technological, practical, and social resources to facilitate adaptation partnerships, and that these resources serve as a means to advance certain ends: technological development, entrepreneurial initiatives

and scaling up adaptation research. These respective ends are discussed in further detail below.

5.3.3.1 Technological development and innovation

With access to cutting-edge research and technology from the university, partnerships with local communities can lead to the development of innovative solutions, such as low-cost irrigation models for winter cropping, early warning systems, and climate-responsive agricultural practices. As a drought-prone country, extreme weather events limit multiple production cycles, compromising food security efforts (Mloza-Banda, 2003). One of the policymakers spoke highly of LUANAR's potential to design cost-effective irrigation models that could enable them to irrigate crops in winter as an adaptation option. Consider the excerpt below:

> We need to start thinking about low-cost technologies that rural farmers can afford to harvest water for winter cropping. What we see with most NGOs and rural communities are imported technologies which require huge capital investment. There is also a need for skills to manage the systems as most communities are not well equipped with knowledge on the operationalisation of irrigation technologies. Our university should be challenged to reproduce the same technology here so that it can be locally accessed at cheaper prices. Not anyone can own solar pumps or treadle pumps to irrigate (Karen, policy maker)

The excerpt above suggests two important aspects. First, policymakers expressed dissatisfaction with the overreliance on imported irrigation technologies which mostly do not suit the demands of local contexts and are expensive to maintain. As Mloza-Banda (2003) noted, equipment such as treadle pumps and solar-powered irrigation pumps are not locally developed. Hence, most communities cannot afford to buy these or rely on donations from government or NGOs, which is mostly insufficient to meet the growing demands. Compounded with the skills gap as indicated in the excerpt, most communities underutilise the technologies and often fail to maximise the outputs due to their lack of technical knowledge. Policymakers' reference to LUANAR bridging this gap implies a potential opportunity to imitate and reproduce the technology that suits Malawian communities' context so that challenges related to access, knowledge, and management skills are addressed.

Second, the aspect of affordability brings a dimension of inclusivity for resource-constrained households, unable to afford imported sophisticated technologies such as solar irrigation pumps. In HD terms, the low-cost technology will ensure value for money, where communities would be able to optimise returns from a low-cost effective approach. As Alkire and Deneulin (2009) argue, efficiency implies optimal utilisation of the most cost-effective measures to reach the desired goal. It is also expected that more communities would be involved in the winter irrigation scheme by addressing the affordability challenge, thereby increasing participation and empowerment.

Apart from irrigation technologies, policymakers explained that partnerships can lead to putting people and their communities at the centre of early warning systems development. Commenting on the need for early warning systems that respond to the needs of local communities, one policymaker suggested that partnerships provide the right platform for a bottom-up approach to developing early warning systems:

> Frequently, discussions surrounding the development of Early Warning Systems feature a top-down approach, which involves creating these systems from global to regional to national levels or from national to district to community levels. However, it is worth considering whether reversing this process could yield valuable insights. This is the space university community partnerships should explore and experiment on. (Mrs Lwazi, policymaker)

The excerpt recommends a novel approach to the development of early warning systems, proposing a departure from the conventional top-down approach and advocating for a bottom-up model, commencing at the local community level and progressing upwards through district, national, and even regional or global levels. This alternative process is seen as a way to unique insights that may not be discernible through the traditional approach. As such, the excerpt suggests that the most appropriate platform for exploring and implementing this alternative approach is through university-community partnerships. These partnerships could serve as arenas for experimentation, innovation, and exploration of the reversed development process for early warning systems.

Regarding innovation, support staff said that introducing a community radio and outreach mobile clinic would improve the university's research uptake, broaden outreach scope and improve awareness of climate information. Hence, such an innovation would help

farmers make informed decisions about farming practices and management, as evidenced by the following excerpts:

> Mobile clinics with students and staff would provide advisory services to farmers in a timely and bridge the institutional barriers. (Mrs Nkhata, support staff)

For Mrs Majawa (Mkwinda), knowledge of when and how to undertake specific farm activities such as planting is key as rainfall pattern is unpredictable. She lamented the poor prospects for a university radio service that would assist them with knowledge of scheduling on-farm activities.

> It's difficult to know when to plant these days because of the uncertainty of rainfall patterns.

The creation of a medium for transferring context-based extension services on climate adaptation would open spaces for dialogue, learning and replication between LUANAR and communities. Such platforms hold the potential to promote collaboration, and community empowerment, and create spaces where university and communities would imagine, and reflectively share ideas, on advancing adaptation partnership work.

5.3.3.2 Entrepreneurial opportunities

Entrepreneurial opportunities aimed at poverty reduction were mentioned as another space that partnerships can use to advance climate adaptation work. This realisation highlights the interconnectedness between development and the environment where the poor are both viewed as agents and victims of environmental degradation (Omoboye 2011). Community members shared that most of the environmental burden falls on poor communities as forest products are viewed as alternative sources of income:

> We are not proud of the charcoal business because it depletes the environment. But the problem is that have no other alternative sources of providing for our families because we are poor. (Mr Dziwe, Mkwinda)

While recognising unsustainable practices like the charcoal business highlighted above, some community members felt the partnerships could support sustainable alternative sources of income. Refer to the explanation by one of the community members below:

> Mushroom production and beekeeping are profitable and we have seen the same being advocated by most NGOs as reliable adaptation efforts. (Mr Mbale, Chitseka)

Additionally, some communities reflected on recycling waste products, especially paper, into briquettes that could be sold for income. Miss Gawani, (Chitseka) shared her experience:

> I went through training from an NGO on how to make briquettes from wastepaper. I feel such opportunities could be an initiative that our colleagues from the university can build capacity for us because it is a viable business adventure.

The findings suggest that partnerships can leverage entrepreneurial opportunities to reduce poverty and promote climate adaptation. Although unsustainable practices like charcoal production are prevalent among poor communities due to a lack of alternative income sources, some community members believe that partnerships can support sustainable alternatives such as mushroom production, beekeeping, and waste recycling into briquettes. These initiatives align with the HDA, which emphasises the importance of enhancing people's capabilities and expanding their choices to lead a sustainable and fulfilling life. By building capacity and supporting sustainable income-generating activities, partnerships can contribute to poverty reduction and environmental sustainability in these communities.

5.3.3.3 Research on new crop varieties

An enabling environment was also seen as a space to support research on new crop varieties. While acknowledging existing efforts on research on new crop varieties, interviewees proposed partnership initiatives aimed at scaling up research on high-performing, climate-resilient, and diverse nutritious crops such as cassava, local fruits, sorghum, and millet, that would make agriculture more dependable. Such views were cognisant of the ever-changing need for more research to address food shortages created by emerging climate threats. For instance, community members said that the increase in demand for indigenous fruit trees facing extinction, such as species from Parinari curatellifolia, is an opportunity for partnerships to research and revive local varieties which are credited for being more nutritious, income-generating and containing herbicidal traits. Mr Tolani (lecturer) explained:

> The focus has mostly been on exotic fruits, but LUANAR can also take an interest in researching indigenous fruit trees, which are highly nutritious, and some are used to treat worms and pesticides. Unfortunately, these are slowly facing extinction. Replacing these requires efforts both from LUANAR and communities.

The observations above point to the need for an environment that fosters collaboration between LUANAR and surrounding communities to research emerging areas of interest that can improve food systems but also respond to the emerging threats of climate change. As can be deduced from the findings, the proposed partnership initiatives aimed at scaling up research on high-performing, climate-resilient, and diverse nutritious crops align with the human development approach's focus on enhancing people's capabilities and choices. By promoting sustainable agriculture and addressing food shortages created by emerging climate threats, these initiatives can contribute to improving people's well-being. Further, the proposed partnership initiatives also recognise the importance of involving communities in efforts to recover local varieties of indigenous fruit trees. This aligns with the human development approach's emphasis on empowering people to participate in decision-making processes that affect their lives. By involving communities in these initiatives, partnerships can promote inclusive decision-making and foster SD.

5.3.3.4 Knowledge about funding opportunities

The interviewees expressed the importance of establishing effective partnerships in shaping funding choices. The data gathered from the interviews confirms the belief that effective coordination within these partnerships establishes the framework for negotiations with donors regarding climate adaptation initiatives.

> Donors want to see local communities involved in projects they fund from the design stage. (Mrs Sagawa, lecturer)

Related to this, lecturers highlighted the significance of coordination among various departments within the university, as this enables successful negotiations for multi-sectoral projects that can leverage the diverse expertise available in those departments. This is evident in the following excerpt:

> I feel that as a university, we must come together and design projects that address climate threats from a broad spectrum, considering how diverse the impacts are. This could also position us better in terms of value for money when negotiating for resources from donors. (Mrs Gama, lecturer)

Concomitant with benefits associated with coordination, one of the lecturers spoke on the potential of bargaining for integrated programmes on climate adaptation as donors would see the value of synergies in climate response:

> The faculties work in isolation. Many donors fund specific themes, which mostly leaves out other equal components…if the systems can be connected, the synergies will be key in addressing climate threats.ie horticulture, aquaculture, agriculture, land and all these other faculties can be built on each other (Mr Chilobwe (lecturer).

In considering funding and grant opportunities, policymakers' opinions imply that universities typically have access to research grants and funding opportunities that can assist communities in obtaining financial support for climate adaptation initiatives.

> It could be one way of empowering communities, driving the localisation agenda where communities should be empowered to manage their own funds. (Mr Kachingwe, policymaker)

The excerpts above suggest that universities lack coordination in their approach towards climate adaptation partnerships, leading to less resource efficiency for adaptation efforts. The case of Mr Chilobwe exemplifies the tension within the HD paradigm, where working in isolation undermines the importance of efficiency and sustainability. Alkire (2010) posits that optimising human, material, and community resources can enhance individuals' and communities' capabilities to attain their objectives. In this scenario, the partnership appears to have failed to maximise available resources that could have advanced the partnership's work.

Similarly, Mrs Gama's views imply that lobbying for integrated projects that address the multidimensionality of climate change would be more feasible for LUANAR if departments collaborated and pooled their resources to achieve a common objective. This observation highlights the importance of optimising available resources to achieve greater outcomes, a fundamental aspect of the HD paradigm. Alkire and Deneulin (2009) argue that demonstrating efficiency in HD requires maximising the utilisation of the most cost-effective measures to reach the desired goal. In this context, Mrs Gama suggests an opportunity for LUANAR staff to showcase value for money by persuading donors to fund partnership adaptation programmes as a single entity rather than each faculty submitting

separate applications. The aspect of empowering communities is highlighted in Mr Kachingwe's excerpt on the need for the university to consider supporting communities to secure grants for implementing local projects.

5.3.3.5 Social capital and networks

Interpersonal relationships between LUANAR staff members and communities were viewed as a valuable resource. Lecturers explained that while the exchange of knowledge and skills between the university and communities is not formalised through agreements, both the university and communities continue to collaborate on climate adaptation based on trust and shared norms and values. Mrs Sagawa (lecturer) exemplifies this here:

> I wouldn't particularly say there is any evidence of a written agreement or specific structures that the university has built in the community. We live here with them, especially those around us and by being here, we are part of the community and easily engage with them.

Although there are indications of gaps in the formalisation of partnerships, one can infer that trust plays a significant role in fostering confidence and acceptance between the two parties. From its standpoint, the university operates under the belief that its structures are rooted in the local community, thereby cultivating a sense of belonging and integration. These perspectives exemplify the community's trust and confidence in the university to the extent that the absence of written agreements does not hinder the implementation of adaptive measures.

The potential role of social capital and networks in promoting collective efforts and participation, which ultimately influences the outcomes of partnerships, was also recognised. Collective action is reliant on social capital and networks, as it involves a group of individuals voluntarily working together towards a common goal (Adger, 2011; Eakin et al., 2008). Students acknowledged that social capital fosters group work and innovation. For example, Treeza, a third-year student, explained that she collaborated with three other students on a natural forest regeneration project in Chiseka village and hatched an idea of integrating beekeeping into the project for honey and other bee-related products. This innovative idea was not part of the original plan but emerged as the students brainstormed together on how they could support the community to make extra income. She explained:

> As we embarked on supporting the forest restoration project, we proposed to communities to consider beekeeping as an added adaptation income strategy. It requires small capital investment but generates more income through sales of honey and other honey-related products. All you need are beehives which can be sourced and produced locally (Treeza, development studies)

Community participants' life stories also revealed that social capital and networks strengthen bonds and empower communities. Through partnership initiatives, the study found that members accommodate each other's views in pursuing a shared interest, potentially strengthening each other's weak areas. Mrs Nyamu (Mkwinda) exemplifies this view:

> We mostly work as a group in most of the interventions. This helps us further strengthen our ties, know each other better and find ways to support each other's weak areas. I will give an example of how we work on demonstration plots. When one member is struggling to understand or transfer the technologies to their farms, we work as a group to support them. Working in groups also helps us to iron out issues of concern so that when we transfer knowledge to individual farms, we adopt the right messages.

Networking and linkages with local government extension workers were also viewed as a great opportunity to support partnership interventions. Of critical importance was the lecturers' sentiments that extension workers provide support to students. This presents a potential opportunity for the partnership to leverage the skills of government officers in supporting adaptation initiatives. Consider Mrs Nkhoma's (lecturer) views below:

> We are privileged that every time we work with farmers, agriculture extension officers, and most former students of LUANAR help our students understand the rigours of fieldwork.

Based on the views above, it can be inferred that lecturers emphasised the significance of extension officers in establishing connections and networks with communities, which served as channels for engagement in adaptation efforts. Additionally, the lecturers recognised the extension officers' role in enhancing students' skills through hands-on guidance in responding to climate challenges. These serve as opportunities the partnership can capitalise on to extend its scope of partnership interventions beyond the corridors of the university and community.

The study further found that social capital and networks present an opportunity to leverage existing connections in exploring new partnerships. Policymakers explained that university-community partnerships could assist the university in establishing commercial links with other service providers, including private sector institutions located within local communities. One of the policymakers added that such engagement with private sector institutions could promote synergies, linkages, continuity, and resource efficiency in adaptation efforts, as many also work on climate adaptation initiatives. This is reflected in the excerpt below:

> There is an opportunity for the private sector to benefit from these partnerships too in terms of accessing new knowledge. The latest scientific knowledge does not guide most private institutions and NGOs in implementing climate interventions. The presence of the university in the community could foster partnerships with these stakeholders to open opportunities for linkages. (Mr Nkhalamba, policymaker)

In support of this, Mrs Lwazi (policymaker) shared the potential for partnerships to support strengthening knowledge systems of private sector institutions on modern technologies introduced to farmers:

> One time I visited a grain bank in Mitundu that was financed by a small medium enterprise company but had been abandoned by the community because the project had exhausted its funding. But across the village, we have a university that can take up such and ensure that farmers sustain their operations. But unfortunately, no one cares. Universities should use these as opportunities to engage and support communities. It's because we don't talk to each other on the ground.

Mrs Lwazi's comments suggest that creating synergies and coordination with like-minded initiatives within the community presents a unique opportunity for the partnership to address the multifaceted impacts of climate change. However, private sector institutions have introduced technologies that lack sustainability, which highlights LUANAR's potential role in testing such technologies before implementation to ensure their transferability and applicability in a specific context. This is important because some technologies transferred elsewhere may not suit the local context, as seen in the example of the abandoned steel grain seed bank in Chiseka village due to a lack of community maintenance.

Overall, the two excerpts illustrate the lack of optimisation of available resources in the community for responding to climate threats, as well as the lack of empowerment and sustainability aspects of managing new projects. Participants' views on supporting private sector initiatives were made in the context of enhancing co-production and co-creation of knowledge, opening spaces for dialogue, and enhancing ownership of the interventions. Therefore, the partnership must focus on empowering communities and taking a multidimensional approach to climate adaptation initiatives while also carefully testing and implementing new technologies sustainably.

5.4 Conclusion

In this chapter, I have presented and discussed findings on the motivations for climate adaptation partnerships, and described what existing partnerships between LUANAR and local communities are well placed to achieve. The findings draw from the perspective of diverse participants (lecturers, support staff, policymakers, students and community participants). The main arguments advanced in this chapter regarding the motivations are grouped into four categories. First, partnerships are seen as an opportunity to fulfil the universities' civic responsibility of addressing societal challenges through the provision of knowledge and skills on adaptive capacity. Second, partnerships offer a practical training platform for students doing internship programmes to allow them to apply theoretical knowledge to practical settings. Third, the findings show that the desire to produce scholarly knowledge motivates academic staff to undertake partnership interventions with communities. Lastly, undertaking partnership interventions offers extra financial rewards for lecturers. While communities' views provided contrasting and complementary motivation in the themes discussed above, the major argument is that the motivations for partnerships were strongly driven from the university perspective.

In terms of what the existing partnerships enable, the chapter emphasises the importance of creating an enabling environment for adaptation partnerships. An enabling environment was viewed as one that fosters socio-cultural acceptance and empowerment, improves policy and planning support, and helps to pool together various resources that are accessible to community members. These aspects align with the principles of equity and participation in human development, highlighting the significance of community

engagement in climate adaptation initiatives. Furthermore, the chapter underscores the role of universities in providing valuable resources in the partnership for upscaling adaptation efforts, such as technological innovation, entrepreneurial opportunities, and research on new crop varieties. These opportunities have the potential to empower communities, build climate resilience, and promote SD while addressing climate change challenges.

Additionally, the chapter emphasised the importance of social capital and networks in determining the success of climate adaptation partnerships. Trust and interpersonal connections between LUANAR and local communities clearly play a crucial role in facilitating collaboration and shared goals. Moreover, the chapter highlights the potential for partnerships to leverage existing connections, particularly with government extension workers and the private sector. This opens up opportunities for broader engagement, knowledge sharing, and resource optimisation in climate adaptation initiatives. Overall, the chapter argues that climate adaptation partnerships, when properly structured and nurtured, have the potential to create adaptation outcomes for both university stakeholders and local communities in Malawi. Having discussed the motivations and enabling aspects about existing partnerships, the next chapter presents findings on specific issues that, based on policy makers' and expert views, ought to be prioritised in these adaptation partnerships.

Chapter 6 : Policymakers' and experts' views on key issues to prioritise in climate change adaptation partnerships

6.1 Introduction

This chapter analyses and interprets the perspectives of policymakers and experts regarding the key priority areas in university-community partnerships for climate adaptation. Further, I draw insights from community members because they are the primary beneficiaries of climate adaptation initiatives, and their perspectives and experiences can provide valuable insights into what should be prioritised in the partnerships.

In terms of the presentation of the data, I have organised the findings based on the key issues identified, which are discussed across three broad categories: establishing and sustaining relationships, improving organisational processes and competencies, and strengthening community engagement and education. This discussion is followed by a conclusion.

6.2 Issues to be prioritised in university community partnerships

The questions on what key issues should be prioritised in these partnerships focused on understanding the challenges, benefits, and areas of improvement in the partnerships, as well as what should be prioritised. In response, participants consistently highlighted several key themes, including the need for establishing and sustaining relationships, improving organisational processes and competencies, and strengthening community engagement for knowledge co-creation. These findings are discussed further in the section below

6.2.1 Establishing and sustaining relationships

The major theme from all the data sets was the importance of establishing and sustaining relationships as the cornerstone for the adaptation partnership. This was primarily due to participants' view that relationships enhance reciprocal learning from one another. According to policymakers, relationships have the potential to lay a foundation for collaboration and are a fundamental component to understanding the complex and diverse context of challenges associated with climate threats. One policymaker said:

> The most important thing in a partnership is to know each other, build the foundation together and agree on how you will be operating going forward. The moment you agree on such a path together, it is easier to operate for a common goal and address challenges that unfold. (Mrs Lwazi, policymaker)

Similar views were expressed by one expert, who also said that establishing a relationship ensures that participants create room for joint agenda-setting:

> When we talk about a partnership, we mean situations like having a conversation with the farmers, sitting down with them and agreeing on what to do. You allow farmers to input their solutions, which, for instance, would be local knowledge. Together with the scientific ones, you test together to determine which ones work best or find a combination of the two that suits your context. But for all this to work well, you need to know each other well get to know and understand commonalities and differences first. (Mr Sagawa, expert)

Policymakers further explained that relationships are central to sustaining the partnership:

> I think knowing each other helps the process to be bidirectional, with everyone participating equally and ensuring that all views are incorporated. In the end, everyone feels part of the decisions and holds responsibility to uphold what has been agreed. (Mr Maziko, policymaker)

The views above highlight the importance of knowing each other as a fundamental aspect of establishing and sustaining a successful partnership. It suggests that by taking time to understand one another, there is an opportunity to reach a consensus on how to proceed with their collaboration. This is important, considering climate issues are diverse even within the same geographical set-up. These findings align with and expand on the literature on the value of relationships in climate change adaptation (see Ziervogel et al., 2021; Westley et al., 2013; Chishakwe et al., 2012; Collins & Ison, 2009; Saltmarsh et al., 2009). According to the participants, building effective relationships would mean both the university and communities needing to identify, initiate, develop and maintain a working relationship that aims at working jointly towards addressing climate adaptation issues in the community. In human development terms, collaborative and participatory processes such as agenda-setting relate to equity, participation and empowerment principles. These principles denote fairness in undertaking development processes and inclusive decision-making (Alkire & Deneulim, 2010; ul Haq 1995). Therefore, by working together, the

partnership would ensure that everyone has equal opportunities to contribute to decisions that promote their well-being.

Further probing to understand the significance of establishing and maintaining relationships further revealed two main benefits, namely, fostering clarity and managing expectations and enhancing mutual respect and trust:

6.2.1.1 Fostering clarity and managing expectations

Experts consider relationships essential for establishing a unified approach to adaptation actions, where both the university and communities understand the expected outcomes of their involvement in partnership interventions. They explained that one of the challenges universities face when working with communities is a gap between the community's needs and expectations and the resources that the university can provide. This results in misunderstandings on the part of the university and unrealistic expectations on the part of the community, which may result in them feeling exploited. As one expert said:

> The value in forming a relationship is that the university and community stakeholders will eventually know each other's strengths and weaknesses and learn to communicate effectively with one another. Such communication enhances openness such that they will be free to mention if they can't finish a specific task. This open interaction helps them to agree on what they intend to achieve. (Mr Sagawa, expert)

The views above reflect the significance of connections between universities and communities in setting adaptation partnership goals. This finding corroborates the ideas of Clay et al. (2012) and Sekine et al. (2009), which suggest the necessity for the university and the community to clarify and expect realistic outcomes in forging adaptation partnerships. Thus, clarifying expectations would promote equity in the partnership and further demystify misconceptions, such as communities expecting a lot from the university and forgetting that universities need more resources to address the identified needs. As equity entails fairness in opportunities (Alkire & Deneulin, 2009), the process of clarifying and managing expectations would mean working collaboratively to ascertain what the university and communities would be able to offer to the partnership, given the available resources and expertise. Consider the views below:

> Most of the time, the community's needs for climate adaptation exceed what the university can provide. Good relationships help ensure that the message is communicated in a way that communities understand to avoid misunderstandings. For instance, communities may expect massive infrastructure to assist in seed preservation or value addition, yet the university may need more resources for such investments. The hard part is assessing, prioritising, and agreeing on what is doable within the available resources. (Mr Sagawa, expert)

This excerpt highlights that relationships are essential to navigate the challenges faced by universities in meeting the climate adaptation needs of communities, which often exceed their available resources. As can be seen in the excerpt, clear expectations facilitate dialogue and enable the university and communities to communicate their needs and limitations in line with the available resources and expertise. In human development terms, clarity in managing expectations could further enhance efficiency, as it would assist in directing resources to where they are most useful and further prevent the university and communities from feeling overburdened with responsibilities that may be impossible to implement.

6.2.1.2 Enhancing mutual respect and trust

Policymakers explained that relationships cultivate mutual respect and trust between universities and communities at personal and institutional levels, which are central to ensuring the smooth implementation of adaptation interventions. They linked relationships to strengthening bonds, which could determine adaptation success and spur adaptation innovation. The views below illustrate the position of one of the policymakers who said that when the partners trust each other, they are prepared to share tasks, increasing efficiency in achieving the adaptation goals:

> When the community and university staff relate well at that level, you see everyone taking up the initiative to make a difference; they will assign each other various roles depending on their expertise, dividing them into small manageable tasks. (Mr Maziko, policymaker)

Experts expressed similar perspectives, emphasising the importance of maintaining balanced relationships at institutional and personal levels to ensure the sustainability of adaptation initiatives. Personal social connections were viewed as establishing informal connections between university and community stakeholders, while institutional

connections refer to the formal organisational links between the university and the community. Consider the views below:

> Let staff and students connect with communities and vice versa, but also ensure that such connections strengthen formal organisation systems to continue continuity in case other people decide to move on or cease to be engaged. It is usually trustworthy and more effective when people connect personally because it becomes easier to form networks and relate at the institutional level. Sometimes, people get to join adaptation intervention action primarily because of who else is participating or who one knows. So, the aspect of who one knows comes into the fold sometimes, which becomes an issue if that person leaves. (Mr Jimu, expert)

The importance of personal connection was noted, not only for forming the partnership but also for its continuity. As seen from the above quote, policymakers suggested prioritising personal social connection as a building block for creating and sustaining relationships in a partnership and for building trust. Most importantly, the excerpts highlight the necessity of personal connections in cementing relationships and enhancing the democratic process of planning, implementing and monitoring adaptation interventions.

While communities valued the significance of relationships, they complained that university stakeholders only seem to care about relationships when they need support from the communities. Refer to the excerpt below:

> We mostly see them when they need something from us. I think we need to sustain these connections for a long time to initiate a discussion on what we need. But at the moment, it's always them coming to us asking us to define what we need, what we want and how we can achieve that. It is helpful, yes, but at the same time, it’s like we are defining the whole collaboration ourselves. (Mrs Khoza, Mkwinda)

One expert had similar views, indicating that most of these problems arise due to institutionalisation challenges such as lack of proper consultation, collaborative planning and conducting a needs assessment to establish common interests:

> I think what is lacking is knowing each other’s capacities and limitations and having formal structures that define rules of engagement, agree on deliverables, and clarify the issues relating to participation from both sides. It can be helpful if the partnership forms a strong team to advance reciprocity and common interest. (Mr Sagawa, expert)

The perspective outlined above highlights the importance of addressing power differentials to create a more equitable university-community partnership for climate adaptation. If the desired outputs, outcomes, and impacts are identified solely by community stakeholders, it may be viewed as the university offering a service rather than actively engaging in a partnership. Additionally, this approach would make it difficult to measure the impact of the partnership. Therefore, the university must take steps towards a more collaborative partnership, where universities and communities jointly make decisions. This approach would reinforce calls for advancing co-designing adaptation solutions for climate threats (Rieckmann et al., 2021; Zulu, 2017; Laukkonen et al., 2009). In cases of misunderstandings or conflicts, the partnership should be prepared to resolve them through mediation, negotiation, and compromise based on mutual respect. These findings align with the ideas of Rieckmann et al. (2021), Mtawa (2016), and Worrall (2007), who stressed the importance of mutual respect as a cornerstone of partnership success, allowing partners to voice their priorities for outputs and outcomes.

While building and sustaining relationships was valued, the following section discusses another valued priority in relation to organisational processes and competencies.

6.2.2 Improving organisational processes and competencies

This section focuses on participants insights into governance aspects of these partnerships, specifically addressing three core issues: formalising structures at all levels, on-going capacity analysis, asset mapping as a reiterative process and effective communication. The next section provides a more detailed discussion.

6.2.2.1 Formalising structures at all levels

Setting up and reviewing formalised structures was considered a critical priority for the partnership, concurring with Drahota et al.'s (2016) findings that formal structures for university-community adaptation partnerships result in the efficient management of partnership interventions. Policymakers spoke of formalised structures as the heart of the partnership that directs the operationalisation of adaptation interventions from both the university and community perspectives. One policymaker said partnerships should be formalised through a signed Memorandum of Understanding (MOU), which must be updated periodically, as a basis of this coalition:

> The university cannot work without establishing partnerships that are sustainable. What sustains a partnership? In developing MOUs, we need to understand what LUANAR wants, what the other stakeholders, like communities, want, what their expectations are, and how we can meet them. And that needs to be formalised through MOUs. These MOUs need to be updated because, as we are living now, the challenges that LUANAR will be having in the next five years will not be the same challenges they will have in the next 10 years. Because it's like a symbiotic relationship where we are benefiting from each other. No one joins a partnership without expecting any benefit. So, we need to understand what the benefits are? How can we work together and add value to each other. (Mrs Lwazi, policymaker)

The above excerpt seems to suggest that an MOU was valued as a product of partners agreeing to a common cause. The argument from this view is that with clearly defined roles stipulated in the MOU and translated into language conversant to all, both LUANAR and communities confirm their commitment to an enforceable contract everyone feels confident about. As Jacoby (2003) argues, failure to agree on expectations can lead to misunderstandings and miscommunications between partners, which can hinder effective collaboration and decision-making.

Unpacking the benefits of agreeing on an MOU, Mrs Lwazi also said that shared vision can potentially lead to the university and communities committed to fostering adaptation interventions:

> In a situation where both partners have a common goal, everyone feels the duty to share knowledge and integrate other people's suggestions for responding to climate threats. It gives the local people a chance to discuss local ideas as the university is obliged to integrate local knowledge into the scientific knowledge. (Mrs Lwazi, policymaker)

Experts also said a signed agreement between the university and the community leads to a feeling of belonging. All experts indicated that the MOU acts as the glue that holds partnership partners together. As a result, both LUANAR and communities develop a sense of belonging, which triggers ownership and sustainability of the adaptation intervention. Sustainable interventions are those that create people opportunities to flourish and attain human fulfilment (UNDP, 1995). The results of an agreeable MOU are that participants are motivated and share direction for planned initiatives. In human development terms, shared vision promotes agency, participation, collaboration, and

empowerment. These findings are familiar in the literature and build on existing work by various scholars that foreground the necessity of structures as a means of sustainability for partnership interventions (see Galan et al., 2022; Mtawa, 2016; Strier, 2011; Brinkerhoff, 2002).

While acknowledging the necessity for partnerships, experts said an implementation plan was needed to guide the implementation of the MOUs. Refer to the excerpt below:

> Apart from MOUs, we also need to find ways in which the partners interact. What mode of interaction should be? MOUs can be there, but they will collect dust if there are no activities set aside to cement that relationship. So, what activities are there that we will be doing together? So, we need to look at how we are going to interact. (Mrs Jimu, expert)

The need for formal structures at the community level was also underscored by one lecturer who said that much as the university also works with other organisations on the ground, it needs to consider institutionalising the partnership with established local structures like village development committees. This was due to the fact that most organisations are not permanently resident in the communities, which leaves a huge sustainability gap. While highlighting the significance of formal structures with local community leadership, experts said the personnel running partnership interventions from the university perspective should be recruited on a full-time basis to develop a commitment to the work. They shared that the partnership needs “full-time committed community members with skills and competencies on climate adaptation” (Mr Mbewe, expert). This observation was because oversight management of partnership work at the community level becomes a challenge when members are recruited on a temporary basis. Experts' voices seem to imply that physical structures such as offices and full-time personnel were viewed as evidence of partnership functionality, suggesting such traits as indicators of functionality, visibility, and sustainability:

> Partnerships should not just be talked of. We need to see, visit, and interact with partnership actors in their localities. In this case, the university must have an established office that runs the partnership work with communities so that the interface between the two actors is seen, appreciated, and followed as a system.

> The people running these offices must also be well trained and working full time. (Mr Sagawa, expert)

When asked about the attributes of the people running the partnership's offices, experts said participants must be trained to cultivate critical and analytical skills such as analytical skills, effective communication, community mobilisation, conflict resolution and group dynamics. Such attributes relate to the recommendations by Preece (2016) for partnerships to capacitate local community leaders with analytical skills to ensure decision making informed by the interests of all. However, while thinking of effective communication, consideration must be given to Mathebula's (2018) findings that while some officers running partnership offices may have good analytical skills, they may struggle to communicate effectively because they may not be good communicators.

In unpacking the current partnership, experts emphasised the need to strike a balance between university and local structures, as the current partnership has only instituted structures at the university level, where the offices of outreach and research oversee partnership interventions. The same cannot be said about the community level, where no formal structures exist, participation is purely voluntary, and no specific roles and responsibilities are defined. All the policymakers agreed that such an arrangement presents challenges to the partnership's sustainability. Communities and the university need to agree upfront on the objectives and expectations and, most specifically, lay out formal structures for the adaptation interventions. Consider Mrs Lwazi's (policymaker) views:

> The most important thing is to balance the needs and expectations of both sides. One cannot set up offices at the university to oversee partnership interventions with the community, and yet the same structures still need to be replicated on the other side. Whom will you be liaising with for decision-making? Creating permanent structures at the community level is essential so that the adaptation work is viewed as a permanent initiative with people agreeing on roles and expectations. This should be the responsibility of both university and community leadership.

In the excerpt above, the critical issue highlighted is centred on the necessity of setting up adaptation structures at the community level to undertake adaptation interventions in

a coordinated, mutualistic manner. As noted in the excerpt above, one can see that the presence of structures only at the university shows power imbalances as it is in a position of authority over the community. This positioning parallels the human development notion of development. In the human development conceptualisation, communities are viewed as equal partners and agents of the development process (ul Haq, 1995). This implies that at the community level, the leadership should explore efforts at setting up local structures or seek support from the university on how to create such structures.

The study identified various practical examples of institutionalising structures in university-community partnerships for climate adaptation. For example, Mr Nkhalamba, (a policymaker), suggested training local communities in group dynamics, leadership, and the basics of climate change adaptation. Additionally, creating spaces for community members and university staff to serve in each other's organisational structures was viewed as a commitment towards institutionalisation, as it promotes knowledge exchange and capacity building. The inclusion of community members in the university partnership structure in an advisory capacity could also provide new opportunities for the community to access other university resources, such as contributing to organising university-community open days. These findings highlight the importance of creating institutional structures that promote collaboration and knowledge-sharing between partners in university-community partnerships for climate adaptation. The most crucial notion is creating an enabling environment for communities and universities to participate actively in the decision-making process of partnership interventions. This reiterates the fundamental objective of human development, which views development as concerned with both the process and the level of achieved well-being (Boni & Walker and Mc Lean, 2013; Alkire, 2010).

6.2.2.2 Ongoing capacity analysis

While formalising structures was deemed a crucial priority, experts also emphasised the significance of conducting regular assessments and reviews of the functionality of these structures and systems at both the university and community levels. This was considered important to foster evaluation of the partnership's progress in delivering desired outcomes and to identify opportunities for enhancing partnership operations in the future. Experts

proposed engaging a private assessor to conduct an ongoing capacity assessment and recommend areas for capacity strengthening:

> It has to be an independent person so that they are not conflicted. In that way, everybody will be open to embracing the areas that need improvement. (Mr Sagawa, expert)

For Mr Mbewe (expert), the ongoing capacity analysis must further prioritise evaluating governance and capacity skills, including allocating financial, human, and technical resources to ensure they are aligned with the partnership's goals and objectives:

> The resources used in the partnership must be reviewed from time to time to ascertain their availability and sustainability. This would help the partnership to ascertain whether they need to engage other funders or institute internal mechanisms for mobilising funds for implementing interventions. Human skills and competencies need to be examined, too so that the structures are able to redesign and incorporate emerging climate threats, which helps ensure that the adaptation plans and outcomes are aligned with the climate threats. For instance, the university would consider how to assess community response to the recurrent episodes of cyclones that continue to impact communities while at the same time incorporating significant issues in their research and outreach functions. Similarly, communities would be able to assess their capacity in terms of skills workforce and commitment to undertake cyclone response interventions and determine ways of adapting to its impacts.

From the above excerpts, the study findings highlight the importance of regularly assessing and reviewing the functionality of partnership structures and systems at both the university and community levels. This ongoing capacity analysis is essential for evaluating the partnership's progress in delivering desired outcomes and identifying opportunities for enhancing partnership operations in the future. In HD terms, this relates to the principle of efficiency, which implies the optimal utilisation of cost-effective measures to reach the desired goal (Alkire & Deneulin, 2009). Therefore, undertaking periodic capacity analysis can identify the strengths and weaknesses of the partnership, allowing partners to build on their strengths and address their weaknesses. As capacity analysis is an action-oriented process (Suarez-Balcazar et al., 2015; Strier, 2013; Serrano-Garcia, 1990), it can enhance the effectiveness of the partnership in terms of participation, empowerment, and sustainability, ensuring that it achieves its goals and objectives.

Capacity analysis was further linked to sustainability plans for the partnership. Experts' views seem to suggest that assessing the capacity of local community leaders would further identify and build skills in community leaders to continue monitoring the adaptation interventions in the absence of university stakeholders. For instance, in times when the university actors are not physically available in the community, the local leaders are expected to take the lead in advancing adaptation strategies under implementation:

> The university is not always physically available to provide us with ideas for challenging contexts. The leaders must be skilled to rise up and coordinate community initiatives, but they require skills. (Mr Nkhalamba, policymaker)

Calls for local development structures as sustainability options for climate adaptation are well documented in the literature (see Ziervogel et al., 2022; Boulanger et al., 2013). On-going capacity analysis would, therefore, address such capacity gaps and ensure that local community structures are empowered to meet the demands of sustaining and monitoring the interventions in the absence of the university stakeholders.

6.2.2.3 Asset Mapping as a reiterative process

Asset mapping was described as an exploratory exercise which communities and universities undertake to identify resources, gifts, talents, skills and knowledge for enhancing adaptation partnership interventions. It includes but is not limited to understanding resources, relationships and structures that could be central in planning climate adaptation work. Policymakers highlighted the necessity to continuously conduct asset mapping for the university and communities to establish available resources as a critical priority for advancing the partnerships. Thus, through a continuous process of mapping out resources, the partnership would adjust its approach to incorporate new issues in the partnership and further leverage existing strengths and skills to support decision-making, implementation and monitoring of adaptation interventions. According to policymakers, asset mapping empowers the university and community to value and recognise their strengths and capacities in solving societal challenges such as climate change. Their perspectives concurred with Gibson's (2005) ideas that asset mapping provides a positive language for community action. It contains traits of empowerment because of its focus on what the partners have instead of their needs. Mr Nkhalamba (policymaker) explained:

> The process of mapping assets sends a powerful message that assumes communities and universities have existing skills and capacities to advance adaptation efforts. It aims to show that universities and communities, including locally based organisations and even private stakeholders' residents, have a crucial role to play regardless of their background. It is, therefore, essential to recognise the diverse talents, skills, and resources of all members of the society from both ends and build on them to help the partnership shift from a needs-based to a strength-based perspective. For instance, engaging elderly members with the skills that the community has relied on to cope with climate hazards or local risks without university assistance would be a starting point for co-creating context-based adaptation solutions.

Overall, the excerpt highlights the transformative potential of asset mapping in fostering collaboration, empowerment, and effective climate adaptation efforts within university-community partnerships. It also shows that asset mapping can result in relationship building and a shift in power towards community agency to undertake adaptation interventions, thus recognising that people and not institutions or programmes build power in a community. It also shows the value of inclusiveness of all the people's gifts and talents.

For Mrs Lwazi (policymaker), it is necessary to repeat the asset mapping frequently to incorporate new skills, talents and other actors that may emerge with time, so that the partnership can incorporate emerging climate needs. Central to her argument was that dynamics at the community level change over time, hence the need to continuously explore new ways of engaging communities and universities as resources for the partnership's success. She explained:

> Now we are talking of cyclones, since 2015 there has been a recurrence of them, a new climate disaster for the communities. The response and adaptation components may be different from the other disasters such as droughts and floods which we have been used to. So, asset mapping helps integrate new skills, talents, actors and ways of responding to threats and reposition the community's capacity to address such emerging threats.

The critical argument is the need to underscore prioritising asset mapping as a reiterative process in climate adaptation partnerships. As an interactive exercise, it offers a dialogue space that enables the community and university to evaluate the internal capacity and identify areas where the partnership needs support. In other words, the excerpts above

suggest that asset mapping can lead to agency and empowerment, especially for community members. It alters the community's position in climate adaptation work by foregrounding what communities have instead of what they need.

The previous section highlighted the transformative potential of asset mapping in fostering collaboration, empowerment, and effective climate adaptation efforts within university-community partnerships. Building upon this understanding, effective communication becomes a critical component in ensuring the success of these partnerships.

6.2.2.4 Effective communication

Perspectives on the importance of effective communication in partnerships were founded on the idea that two-way feedback is crucial for demonstrating transparency and accountability within and outside the partnership. Effective communication, as an indicator of partnership functionality, came out strongly in the interviews of all experts. They regarded effective communication as essential for partnership success, as it keeps people informed and involved in the climate discourse, enabling them to make informed decisions on how, when, and which adaptation options to undertake. One expert explained that effective communication is necessary in the foundation stages of initiating partnerships to ensure an inclusive approach that clarifies the expected roles and outcomes of all actors in the partnership. This is evident in the following:

> It is important that during the initial stages of forming the partnership, both partners determine if the process will be mutually beneficial, thus allowing key issues to be deliberated openly. During this initial stage, informing each other and having a proper dialogue set the scene and clarifies all expectations. (Mr Sagawa, expert)

It was strongly emphasised that communication plays a crucial and fundamental role in partnership functionality. Experts spoke highly of effective communication as a way of providing continuous feedback to alert communities on future climate projections and on impending disasters to alert them to prepare appropriate responses. Mr Sagawa (expert) says that continuous feedback relies heavily on effective communication:

> Continuous feedback between partners on current and future climate projections is necessary to prepare communities for any impending climate disasters. Communities need to be aware of future threats, and communication is key to that. Sharing information also helps partners to avoid conflicting information. You

> shouldn't be in a partnership where one partner is expecting one thing, yet the other is unaware that this is expected.

Similarly, communities indicated that they rely heavily on communication from the university on new research findings on climate adaptation. Not only was effective communication linked to the university disseminating new knowledge to communities, but it was also linked to community members' ability to input local knowledge and experiences into the partnership. It was not surprising that experts explained that for the university to effectively disseminate knowledge to communities, it requires staff and students skilled in public speaking and community engagement. They said climate change terminologies are scientific in nature and can be problematic for communities to comprehend, hence the need for special communication skills:

> They must be able to engage with the communities, command authority in what they say, speak in a language and manner that community people can understand because the diversity in culture and literacy challenges can impede others from understanding. (Mr Maziko, policymaker)

The above excerpts highlight the significance of effective communication in the adaptation partnership. These findings are consistent with views presented in the broader literature on the role of effective communication in ensuring partnership functionality (Rieckmann et al., (2021). Specifically, in the context of Malawi, the findings align with Mazinga's (2021) and Nkhoma's (2017) research on the need for rural development workers to have effective communication skills.

Experts further valued prioritising communication because it serves as a key enabler in fostering understanding, trust, and collaboration between the university and the community. Both parties can share their knowledge, experiences, and perspectives on climate change issues by promoting open and transparent communication channels. This enables collaborative problem-solving, as effective communication allows for the identification of shared goals, challenges, and potential solutions. However, policymakers said that for communication to be effective, it requires both the university and communities to exercise active listening, clear articulation of ideas, and respectful dialogue. These were viewed as attributes that would help build consensus, encourage joint decision-

making, and strengthen the collective capacity to address climate change challenges effectively.

The significance of effective communication was further highlighted in the context of resource mobilisation. Policymakers said effective communication plays a crucial role in attracting funding and resources to the partnership. They indicated that effectively communicating the adaptation partnership's goals, objectives, and potential impacts can capture the attention and interest of potential funders and resource providers. As Mr Maziko says below:

> Packaging and sharing information with stakeholders can motivate and reinforce the urgent need for climate change adaptation initiatives and demonstrate the value and potential return on investment of supporting such projects.

For experts, effective communication helps convey the partnership's expertise, credibility, and track record in addressing climate change challenges. This builds trust and confidence among funders and resource providers, increasing the likelihood of securing financial support, grants, donations, and other valuable resources. Additionally, through effective communication, the partnership can engage with stakeholders, including government agencies, private sector entities, and philanthropic organisations, to foster collaborations and leverage additional resources. As a summative discussion on the above analysis, effective communication in the case of the HD paradigm in this adaptation partnership would mean conveying information or ideas clearly, accurately, and efficiently to enable participants to participate in the adaptation partnerships, collaborate and engage with other stakeholders and exercise their agency to initiate and undertake adaptation interventions.

Having discussed the crucial role of effective communication in university-community partnerships for climate adaptation, community engagement and education are next to be discussed.

6.2.3 Strengthening community engagement for knowledge co-creation

Participants viewed strengthening community engagement as significant to the knowledge co creation process. In expanding the discourse of what should be prioritised, the analysis shows five categories: active participation of community members, climate

change awareness and education, skills enhancement and capacity building, foregrounding community-based adaptation strategies, and integrating traditional knowledge in adaptation strategies.

6.2.3.1 Active participation of community members

The importance of active participation of community members in decision-making in the adaptation partnerships came out strongly from the policymakers' perspective because it aligns with government policy calls for community involvement in all partnership interventions (GoM, 2021; 2020; 2019). According to policymakers, climate adaptation partnership work ought to be community-based and encourage active participation of communities, pointing to Alkire and Deneulin (2009) that people should be treated as both the means and ends of the development process (see also Ibrahim and Alkire 2007). From the policymakers' perspectives, active participation was described within the framework of contributing ideas, sharing opinions, asking questions, collaborating with others, and taking the initiative and responsibility for undertaking climate adaptation initiatives.

> It is about ensuring that decisions must start and end with people's involvement and always advance their interests. This involvement is not just about designing the interventions but also elements such as involvement problem-solving, monitoring and evaluation and overall management of the adaptation partnership. (Mrs Lwazi, policymaker)

Despite such articulation, communities' views suggested that active participation in adaptation interventions remains a far-fetched dream. This is despite the government's call for their active participation in climate response strategies (GoM, 2019;2017). They explained that universities do not adequately involve them during the design stage of such interventions, citing instances where students and staff impose ideas on adaptation planning without proper consultation. This imposition of ideas undermines the community's agency and participation in the development process, which is contrary to the principles of the HD approach. By dictating what to do, universities control the narrative, limiting the community's ability to express their perspectives and needs.

To ensure active participation of community members, policymakers suggested that universities adopt a more inclusive approach that values the input and perspectives of

communities in developing adaptation strategies. For instance, policymakers said the term active participation in adaptation partnerships entails moving from the paradigm of involving communities in planning and implementation to include the moral imperative of universities working side by side with communities on climate adaptation interventions. This means that the university and communities undertake interventions such as planning and decision-making processes together to achieve climate adaptation intervention goals. One of the policymakers linked active participation to empowerment and explained that active participation could be a precondition for community empowerment:

> Involving communities is more than just talking to communities about preferred adaptation strategies or what they think would support their adaptation priorities. It is about having a two-way dialogue to understand what they have to say in all aspects of the partnership interventions and ensure that a conducive environment is offered to them. Active participation gives communities a sense of ownership and control over making preferred adaptation decisions, eventually leading to increased confidence and desire to participate actively. (Mr Nkhalamba, policymaker)

The key takeaway from this excerpt is that participation is about a two-way dialogue between universities and communities to understand each other's perspectives, needs and concerns. Such an environment eventually breeds a conducive environment where communities feel empowered and have a sense of ownership and control over decision-making processes. Communities gain confidence and feel motivated to engage further in adaptation interventions.

6.2.3.2 Climate change awareness and education

The perspectives of policymakers suggest that the partnership should prioritise raising awareness among university stakeholders and communities about the climate challenge. They said this can be achieved through the development of relevant curricula and pedagogical practices on climate adaptation strategies that educate students and sensitise communities on appropriate and effective ways to advance adaptation interventions. While acknowledging existing climate change awareness and adaptation efforts in the current partnership, all policymakers emphasised the need to scale up and prioritise more effort in ensuring a systemic approach to climate awareness and adaptation. Specifically for policymakers, building climate awareness and education was

linked to what Leah Filho (2021) calls the societal carbon brainprint, which states that universities should orient communities with skills and knowledge that would foster adaptation actions. Policymakers also saw prioritising climate change awareness and education as an opportunity for the university and communities to deeply explore together the risks, impacts and possible steps the partnership must consider in advancing adaptation actions. Consider one of the policymaker's views below:

> Our official stand as government is that through the developed climate change learning strategy, we expect various stakeholders to align their efforts to the policy call. In short, the policy recognises that climate change is a new phenomenon, and an effective response requires more awareness, knowledge, and skills. So, platforms such as university community partnerships should also foreground this component because communities need to understand the concept clearly to meaningfully adopt appropriate and robust adaptation strategies to counter the adverse impacts of climate change. (Mr Nkhalamba, policymaker)

Bearing in mind that the university is located in a rural area, experts indicated that climate education and awareness are acute because most of the communities' source of livelihoods are often closely tied to natural resources and weather patterns. This is how one of the experts put it:

> If you look at where all the charcoal sold in town comes from, you will notice that most of it is from around the Bunda (LUANAR location) area. This tells you that most people earn income from endangering the environment. They need a mindset change, empowered with knowledge and skills to desist from such unsustainable practices. (Mr Maziko, policy maker)

The findings underscore the importance of promoting climate education and awareness in rural universities to foster SD, enhance livelihoods, and protect the environment. For instance, Mr Nkhalamba's perspectives provide additional insights into why community education and awareness play a prominent role in government initiatives to address climate change, as evidenced by various policies and strategies, such as the Malawi Climate Change Policy (2016), the National Climate Change Resilience Building Strategy (2019), and the Climate Change Awareness Strategy (2017). The findings build on a body of literature that highlights the university's role not only in developing curricula and pedagogical approaches for students but also in educating and sensitising communities and developing necessary education materials and tools to tackle unsustainable practices

and promote pro-sustainability efforts (see Molthan-Hill et al., 2021; Molthan-Hill et al., 2019; Mochizuki, 2015). Given that effective adaptation to climate change relies on increased awareness, knowledge, and skills, prioritising climate education and awareness can empower communities to make better-informed decisions and undertake safer, environmentally conscious practices. As Leah Filho et al. (2023) argue, universities can promote adaptive change by increasing awareness of climate change and encouraging changes in attitudes and behaviours that prepare individuals to face the challenges of a changing climate.

For Mrs Lwazi (policymaker), prioritising climate awareness and education ensures a shared understanding of the challenges and opportunities the partnership can build on in fostering adaptation planning. She explains:

> If all stakeholders in the partnership have relevant information about climate change, it will benefit the partnership greatly. They will work together effectively, inspire each other to try out new ideas that can lead to innovative solutions and, most importantly, motivate participants to take action, whether through implementing the available adaptation options, changing lifestyles, and also taking part in lobbying and advocacy for policy action. (Mrs Lwazi, policymaker)

Mrs Lwazi's excerpt seems to suggest that education contributes to both adaptation outcomes and could lead to transformation through changing lifestyles. In HD terms, changing lifestyles relate to the aspects of empowerment. Empowerment promotes human freedom and dignity by enabling individuals and communities to realise their full potential and live fulfilling lives (Sen, 1999). Thus, as said by Mrs Lwazi, the changing lifestyles would yield benefits that stretch from individual to communal outcomes.

6.2.3.3 Skills enhancement and capacity building

According to policymakers, the university-community partnership should prioritise capacity-building initiatives to enhance community members' skills and competencies to effectively manage existing and emerging climate threats. They noted that capacity building can take various forms, such as training programmes, workshops, storytelling exercises, and practical on-field sessions. These initiatives can help university and community actors to address the complex and interconnected issues related to climate change adaptation. Equally, policymakers emphasised the importance of tailoring

capacity-building initiatives to participants' needs, considering their availability, level of education, and expected roles. They noted that capacity building would improve the ability of community leaders to lead climate change adaptation interventions. Overall, experts suggested that while community leaders should be prioritised, efforts must also be made to target community participants. Consider the views below:

> The partnership should foreground training leaders at the university and community levels to equip them with the skills needed to lead the process. Unfortunately, there is a wrong perception that only community leaders lack skills in climate change response; it is a grave error as university staff are not well knowledgeable on these issues, especially when managing partnerships for climate adaptation. Everyone must be targeted. (Mr Sagawa, expert)

The views above highlight the importance of targeting everyone and promoting inclusive capacity-building efforts that empower all stakeholders to contribute to climate change adaptation efforts. What can be extrapolated from the excerpt above is that empowering both groups with knowledge and skills promotes inclusive decision-making, collective action, and sustainable impact, which resonate with the principles of the HD paradigm. Inclusivity ensures that the entire community is better equipped to understand, respond to, and sustainably implement climate change adaptation measures, leading to more effective and resilient responses to climate change challenges.

The significance of capacity building was further highlighted not only in bridging the knowledge gap between universities and local communities but also in enhancing friendship. One of the policymakers explained that when university and community leaders interact in knowledge-sharing spaces, it fosters a feeling of connectedness:

> Community leaders feel closer to the university and, in the process, build rapport and networks that can be extended for the benefit of building adaptation. (Mr Nkhalamba policymaker)

The above excerpt emphasises the significance of establishing rapport and networks between community leaders and universities to facilitate effective climate change adaptation. As seen above, Mr Nkhalamba notes that community leaders feel a stronger connection to the university when they engage in knowledge-sharing spaces, which promotes the exchange of knowledge and experiences that can be leveraged to enhance adaptation efforts. This approach aligns with the human development approach's

emphasis on promoting participatory approaches to development that empower individuals to participate in decision-making processes and foster collaboration and support networks.

6.2.3.4 Foregrounding community-based adaptation strategies

Experts and community members both said that the partnership should prioritise developing local-based adaptation strategies that are tailor-made to the needs of local communities and that scientific strategies should complement the local adaptation strategies and build on identified gaps in the local strategies. According to experts, community-based adaptation strategies are community-led as they build on local people's priorities, knowledge, and capacities. They described prioritising community-led interventions in the partnership as empowering in nature as communities take the lead in planning adaptation interventions and addressing other interrelated issues of interest. From community members' perspectives, community-based local[8] adaptation strategies such as indigenous early warning systems were viewed as equally relevant and more applicable to communities in rural areas than scientific strategies because of their connectedness to culture, beliefs and values that define specific communities. One community member explained that since such knowledge is acquired through empirical observations and interpretations over time, the partnership should leverage and build on this existing capacity to support communities better.

> We have learned these ways from our forefathers and have been passed on from one generation to the next. Most of these local remedies are safer, organic and more effective than these new chemicals that end up degrading the environment. Look at the chemicals we apply to tomatoes these days; others say they harm the environment. Maybe we need to find a way of combining these two sources of knowledge to enhance better outcomes. (Miss Assani, Pondamali)

The views expressed above concur with findings from other studies that see that traditional or indigenous knowledge offers new perspectives on how scientific knowledge can be integrated to strengthen the climate adaptation agenda (see Rieckeman 2021; Iaccarino, 2003; Berkes et al., 2000; United Nations, 1992). However, some community

[8] Examples of community-based adaptation strategies mentioned include climate-smart agriculture technologies such as conservation agriculture and agroforestry, water harvesting techniques such as dams and ponds, indigenous early warning systems observed through a pattern of animal and plant behaviour, and community-based natural resources management.

participants said that despite this recognition, the partnership does not always reinforce community-based adaptation strategies integration into scientific strategies. One community member explained that the approach taken by the university elevates scientific knowledge at the expense of local knowledge:

> The problem is that when they come to us, there is a feeling amongst community members that universities' propositions are much better and more advanced than the local ones. As such, we abandon their ways of life, preferring to adopt new ones. (Mr Munthali, Chiseka)

Experts had similar views, underlining the sustainability gaps in most scientific strategies.

> While some have worked, there are some that have faced sustainability challenges and suitability to the local context. Such findings have shed light on the need to foreground local adaptation strategies, as most have already proven successful. (Mr Mbewe, expert).

The excerpts above highlight the importance of local adaptation strategies in promoting sustainable and context-specific solutions to climate adaptation challenges. The statement suggests that scientific strategies alone may not always be suitable for local contexts and may face sustainability challenges. This implies that there is a need to prioritise strategies that are grounded in local knowledge, experiences, and practices (see also Zulu, 2016). Mr Mbewe emphasises the importance of foregrounding local adaptation strategies, which have already been proven to be successful. This approach aligns with the human development approach's emphasis on empowering people to participate in decisions that affect their lives and promoting locally driven solutions to development challenges. By prioritising local adaptation strategies, communities can take ownership of their adaptation initiatives.

6.2.3.5 Integrating traditional knowledge in adaptation strategies

While some policymakers mentioned a preference for community-based adaptation interventions, they also underlined the need for traditional knowledge grounded on local values, perceptions, institutions, and knowledge in the partnership. Policymakers described traditional knowledge as historic collective knowledge about changes in weather patterns, biological diversity, and ecosystem trends observed and interpreted over time within a specific local context. With international frameworks such as the IPCC

and the Secretariat of the Convention on Biological Diversity (SCBD) crediting the role of traditional knowledge on climate adaptation (IPCC, 2007; SCBD, 2006), policymakers explained that prioritising this component is one way of enhancing partnership potential in contributing to human well-being. They explained that regardless of the influence of urban culture on local knowledge, traditional knowledge continues to serve as the foundation for designing climate adaptation strategies. This implies that the partnership between the university and communities must underscore the values of traditional knowledge and practices that communities have sustained over time. A significant reflection point from policymakers' description of traditional knowledge was the focus on people as excellent observers and interpreters of weather patterns. Such views highlight what other scholars have written on treating people as agents in the development process (see Martinez-Vargas 2022; Alkire, 2010; ul Haq 1995). The following statement by Mr Sagawa (policymaker) highlights the need for local knowledge prioritisation in the partnership:

> The local people have survived over the years without university support using knowledge developed and passed on from generation to generation. We must be asking ourselves how that was possible. What did they use? Can we tap from that knowledge, and can it be applied in today's contexts? We should be asking ourselves these questions, but one thing for sure is that traditional knowledge has been critical to the survival of communities. This is practical knowledge, for instance, farming techniques and medicinal traditional healing practices rooted within a specific community and tied to cultural beliefs. Highlighting such knowledge will help the university and the community understand the changes over time and how future projections might look.

This view was reiterated by Mr Nkhalamba (policymaker), who underlined the value of conventional knowledge in ensuring sustainable farming practices and forest management.

> Suppose you look at some practices such as crop rotation and intercropping. In that case, you will note that these traditional sustainable farming techniques remain relevant in modern farming. Similarly, controlled burning and selective forest harvests have been skills passed on from the generations and assist in forest regeneration.

The main argument in these findings is the importance of recognising and valuing traditional knowledge as a crucial component of climate adaptation strategies. As the findings presented above contend, traditional knowledge is grounded in local values, perceptions, institutions, and knowledge. The focus on people as excellent observers and interpreters of weather patterns highlights the importance of treating people as agents in the development process. In the HDA, such findings resonate with views of several scholars that emphasise that people must be treated as means and end of the development process (See Alkire 2010; Alkire & Deneulin, 2009; ul Haq 1990). Therefore, the partnership between the university and communities must underscore the values of traditional knowledge and practices that communities have sustained over time.

6.3 Conclusion

In this chapter, I have presented findings on the key issues to be prioritised in the adaptation partnerships. As demonstrated in the chapter, the findings point to three priority areas to be considered. First prioritising healthy relationships as they are the cornerstone of partnership functionality. Thus, university and community stakeholders must endeavour to build relations to ensure harmony, trust and equal opportunities to contribute to decisions that promote community well-being. Second, prioritising equitable partnerships in terms of having formal structures for efficient management of the partnership interventions. Third, prioritising community engagement for knowledge co-creation, skills development and awareness to ensure that university and community stakeholders deliberate on the partnership from an informed perspective. In sum this chapter therefore argues for the importance of building strong relationships, having formal structures, and enhancing knowledge, skills, and awareness in adaptation partnerships between the university and communities as key issues to be prioritised in these partnerships.

Chapter 7 : The contribution of partnerships to community well-being: Insights from the university and communities

7.1 Introduction

The focus of this chapter is on providing university participants' views on the question of how university-community partnerships for climate change adaptation contribute to community well-being. Community well-being, as used in this context of partnership adaptation, relates to a state in which communities are empowered to make valued choices on how the partnership is formed, how it operates, and what outcomes it achieves. In all the interviews with all participants, I asked questions about the contribution of partnerships to community well-being. Although I did not explicitly mention the concept of human development, I was able to draw connections between their responses and align them to the human development approach.

In terms of the presentation of the data, I have organised the findings based on participant groups and the subsequently identified themes. Overall, university lecturers spoke of partnership contribution in terms of offering multiple adaptation options related to skills and knowledge acquisition, strategies such as reforestation and afforestation, crop diversification and acquisition of household assets as well as strengthening local structures and providing an alternative extension service. For support staff, collaboration and coordination, economic livelihood opportunities and enhancing social inclusion emerged as key themes. At the same time, students' views centred on reigniting communities' interests in climate adaptation and promoting student-community affiliation. In presenting the findings, I draw substantially on the perspectives of lecturers and support staff as their voices provided a balance of theoretical and practical understanding of partnerships' contribution to community wellbeing. Students' views are mostly considered in contexts where I aim to demonstrate their reflections on the experience gained and lessons learned from working with communities.

The chapter begins with an introduction and thereafter presents the perspectives of the participants (lecturers, support staff community members, and students). The last section

summarises the partnership contribution in terms of skills and knowledge, discusses the observed gaps and the envisaged role of the partnership. This is followed by a conclusion.

7.2 Participants' views on partnership contribution to community well-being

7.2.1 Providing multiple adaptation options

In responding to how university-community partnerships contribute to community well-being, lecturers said one area where the partnership contributes to sustainable community well-being is through strengthening rural communities' adaptive capacity to respond effectively to climate uncertainties. The ultimate goal of strengthening adaptive capacity was described in various ways, ranging from climate knowledge, practical skills for climate action and financial savings to accumulating various assets such as livestock that act as livelihood coping mechanisms in times of climate-induced shocks. Thus, it would imply that the element of freedom for communities to choose from a range of adaptation options was central. However, lecturers' views suggested that the available adaptation options are mostly piecemeal and lacking in diversity, implying that the options do not build on each other and fail to underscore the multidimensionality of climate response. Over half of the interviewed lecturers said that due to a lack of coordination and collaboration within the university and between the university and communities, most of the strategies championed lack significant co-benefits, synergies, and trade-offs as they are carried out in an unintegrated manner. Thus, one would argue that the current adaptation options fail to maximise available technical skills and resources to expand communities' capabilities to adapt to the impacts of climate change**.** Consider Mrs Mwale's (lecturer) views below:

> Perhaps our most significant challenge is that our departments work in isolation, and the interventions we design target specific components. Even our students are more focused and mostly prioritise what they think will be completed within the short time frame. In short, they lack diversity, but this is entirely our problem because coordination between these departments would have led to integrated projects.

Due to coordination challenges, the university fails to come up with integrated adaptation programmes, a strategy that can address the multidimensionality aspect of climate change:

> As a university, this is an area we have erred in enormously…. we also fail to come up with partnership proposals that can integrate different aspects of climate adaptation so that we give communities more options to explore various adaptations options. Our review meetings have also flagged issues and recommended that communities be actively engaged in designing interventions. (Mr Moyo, senior lecturer)

Based on lecturers' views, the role of university-community partnerships for climate adaptation is to design and offer a diversity of options for communities' adaptive capacity, thereby widening their choices in undertaking adaptation options. Such views support the UNFCCC (1992) recommendations that diverse options for communities often lead to increased confidence, positive thinking, and adequate knowledge of adaptation before making decisions on exploring prospects. From a HD perspective, these observations align with the concepts proposed by Sen (2000). Sen argues that individuals can improve their opportunities and overall well-being through freedom. Therefore, having several options to choose from offers freedom for communities and further espouses communities' interest to choose and act from options they value.

However, while the university possesses the relevant knowledge and skills to support communities with adaptation strategies, viewing the university as a provider of adaptation options suppresses the role of communities in the adaptation process. It is critical that people themselves, through their active participation in the development processes, shape and improve their lives (Mazinga, 2021). As seen in Mr Moyo's excerpt, the findings further underline the centrality of the community's active role in the design process of the available adaptation options, but this has often been neglected. While some lecturers said communities were consulted in deciding adaptation options, it was unclear in terms of how the involvement unfolded and to what extent communities' views were incorporated into the design of partnership interventions. Mostly, all lecturers agreed that with a shortage of time to conduct community consultations, they relied heavily on input from government extension workers[9] and sometimes established local government structures such as the area and village development committees in determining what to include in the design of partnership interventions. In general, lecturers said that government officers'

[9] Government extension workers are staff employed by the government to assist local communities with information and advisory services related to agriculture and natural resources.

views represent the views of the community when designing projects. Consider this example that shows communities' lack of active involvement in the consultations:

> Since government officers reside mostly in these communities and know the challenges that communities experience, it is probably not the most ideal but obviously a shorter way of community consultation which saves time and resources. (Mrs Chirwa, lecturer)

Given the impracticality of constantly involving all members of a community, the area and village development committees are primarily tasked with serving as a representative of the communities. In this role, the committees are also responsible for making decisions on behalf of the community. Consider the excerpt below:

> Just imagine if we are to run consultations in the whole community, it will take us years to finish. So, for the times we engage the communities during the consultations, we go through the local structures. They are the ones that even help with identifying participants and also interventions to implement. (Mrs Gama, senior lecturer)

From a human development perspective, it is problematic to assume that the local government structures represent the views of the entire community because it can restrict the freedom and agency of individuals within that community. Human development seeks to enhance people's well-being and expand their capabilities by empowering them to make choices that align with their values and preferences (ul Haq, 1995). The results presented earlier align with the concerns expressed by Zimba, Simbeye, and Chirwa (2021) in their study of youth engagement strategies in climate action in Mzuzu district of Malawi. The researchers labelled the use of local government structures in consultations as problematic and susceptible to elite capture, as it impedes citizen engagement and fosters favouritism. Therefore, assuming that local government structures views represent those of the entire community can result in policies and interventions that do not consider the diverse needs and perspectives of individuals within that community, which can limit opportunities for those who do not share the same.

In proposing the ideal strategy in conducting consultations, Mrs Chirwa (lecturer) proposes that consultations need to strike a balance between soliciting views from communities and government officers. She explained:

> Going forward, we need to find the right balance between using views from local government structures representatives or secondary sources and listening to what communities say. Attempt to find out if there are youth groups in the community, community or elderly groups and speak to them. Because they speak about issues affecting them in the present state, unlike sources that may have been written a long time ago. (Mrs Chirwa, lecturer)

Recognising the community's active participation in development decisions is critical in ensuring meaningful human development (Mtawa, 2017; UNDP 2016). This is because, since the 1990s, the issue of community participation in development issues has been a significant area of interest in Africa, particularly following the transition from authoritarian to democratic regimes in many African countries (Chasukwa et al., 2013; Hussein, 2019). The normative expectation of local government structures in the decentralised arrangements is that they facilitate increased and improved public participation in decision-making, thus enabling locally accountable representatives and institutional bodies to be more responsive to the demands of the people. Hence, community participation entails that people not only enjoy the outcomes of interventions but also get involved in the process of deciding what they value. While acknowledging that local government structures are mostly acquainted with some of the issues communities experience, their views do not necessarily represent community needs. For instance, government extension workers' views on what communities need to adapt may be influenced by their view on prevailing economic trends, which in human development terms is only viewed as a means and not the end of well-being (Walker & Boni, 2013). Sen (2000) further provides clarity on what transformative human development is by claiming that human development is the development by the people, of the people and for the people.

The lecturers' responses differed regarding adaptation options that could enhance community well-being. For instance, Mr Chibwana (lecturer) viewed community well-being as the community's understanding of climate risks and their ability to acquire knowledge and skills[10] that would enable them to make informed decisions on adaptation

[10] When asked to define skills, Mr Chibwana described skills in terms of both soft and hard skills where soft referred to a mix of social and interpersonal skills that characterize relationships between people whereas hard skills referred to those gained through formal training or workshop experience.

strategies. Mr Tolani (lecturer), linked skills acquisition to empowerment and well-being but was quick to point out the necessity to ensure the availability of enabling factors such as community willingness and support systems to translate skills into practice. He shared that, through capacity-building sessions, the partnership offers relevant skills and knowledge on climate adaptation, which in turn empowers communities to address radical weather uncertainty that may disrupt their normal livelihoods. He explained:

> Our entry-level interventions are mostly training sessions aimed at capacitating communities with skills and knowledge on several aspects of climate adaptation. The emphasis on skills and knowledge is to create a spirit among community members to underscore the how what, and when aspects of climate change so that they can make decisions on their own. (Mr Tolani, lecturer)

In addition to skills and knowledge, lecturers identified reforestation[11] and afforestation [12]initiatives as adaptation strategies to restore degraded forests and establish new ones to promote biodiversity. Trees were deemed vital in regulating the water cycle, mitigating soil erosion, and reducing the likelihood of floods and droughts. The lecturers further explained that trees also enhance local communities' capacity to adapt, particularly in terms of food security and livelihoods, by providing fresh fruits and crops for sale. Mrs Gama (lecturer) explained that the partnership advocates for both indigenous and fruit trees to leverage the benefits of both soil conservation as well as a food source:

> The fruit trees are mostly for food (fruits) while other trees like leaves from Calliandra calothrus specie are for soil conservation. To ensure community ownership, communities are supported with tree seedlings and tubes so that they can raise nurseries on their own as groups. Once the seedlings are ready for transplanting, they either identify a new bare land or target deforested ones. (Mrs Gama, lecturer)

Mrs Mwale (lecturer) spoke of how the partnerships have promoted diversity in supporting communities with a range of early maturing or drought-resistant crops to adapt to the impacts of climate change. She said that with climate uncertainties, the partnership has

[11] Reforestation refers to the process of planting trees in a forest to replace those lost. where the number of trees has been decreasing

[12] Afforestation is when new trees are planted or seeds are sown in an area where there were no trees before, creating a new forest.

supported farmers to adjust farming systems and crop varieties over time in preference for early maturing varieties that minimise crop loss in times of climate risks. She explains below:

> The university has been researching new crop varieties that would assist farmers in harvesting early in times of erratic rainfall. Also, some varieties mature early and produce more yield than local ones. This helps farmers adapt to climate change's impacts. (Mrs Mwale, lecturer)

While appreciating the provision of multiple adaptation options, lecturers explained the need for the partnership to link scientific knowledge to indigenous knowledge on the adaptation options. Lecturers said universities ought to take the lead in leveraging their experience to link scientific and local knowledge in assessing climate risks. Mrs Chirwa (lecturer) said that often there is a disconnect between classroom theories that universities advance and what communities value as preferred climate adaptation. In advancing the aspect of mutual learning, universities must take the lead in explicitly demonstrating how the partnership does not diminish the value of existing local approaches but rather opens up new, highly responsive, and acceptable adaptation options. Mrs Chirwa (lecturer) explained:

> Communities have survived long periods of climate uncertainty because they could use their local knowledge, make critical decisions concerning their well-being and implement them. With progress in scientific research on climate change, the danger is that oftentimes, scientific research is viewed as superior to local knowledge. Universities must strike a balance in ensuring that the partnership makes use of both scientific and local knowledge or further integrates the two in knowledge production and policy guidance.

Mrs Chirwa seems to show her conviction in the university's role in integrating scientific and local knowledge to enhance climate adaptation partnerships. The excerpt seems to suggest that while knowledge systems and practices of indigenous peoples are recognised as a major resource for climate change adaptation, they have not been used consistently in adaptation efforts. From the lecturer's perspective, universities should play a great role in integrating scientific and local knowledge systems that would inform policy and practice on climate adaptation. These efforts align with the agreement reached at the twenty-first session of the Conference of the Parties (COP 21) in Paris, where countries

acknowledged that adaptation action should be based on and guided by the best available science and, where appropriate, traditional knowledge, knowledge of indigenous peoples, and local knowledge systems

7.2.2 Strengthening established local government structures

Another contribution that university-community partnerships make towards human development in rural communities is strengthening local government-established structures. According to lecturers, partnership interventions involve working with existing local structures such as Village Development Committees (VDCs), Area Development Committees (ADCs), and Civil Protection Committees (CPCs) as sustainability structures. Theoretically, as Spoth et al. (2004) argued, working with local systems increases the possibility of sustaining interventions. The partnership exhibits a preference for utilising pre-established community structures to facilitate engagement. This is because the use of local resources guarantees that communication and activities are appropriately aimed and aligned with community interests and capabilities, which are vital prerequisites for accomplishing implementation objectives (Wiseman et al., 2010). The lecturers explained that university stakeholders provide training to representatives of community structures on various climate adaptation strategies, as well as leadership skills to equip them to collaborate with communities and spearhead sustainable climate adaptation initiatives. Consider the views below:

> Local leaders are key in ensuring that interventions run smoothly. They manage relationships and operations between the university and the community and act as a bridge between the university and the community, helping to mobilise communities; hence, they need to strengthen. (Mr Moyo, lecturer)

The inclusion of local leaders yields two important outcomes. Firstly, it relates to ensuring community participation and empowerment in the process of identifying local community needs and further stimulating their agency for adaptation work. Local leaders ensure that all community perspectives are taken into account by engaging in consultations with local chiefs and reaching out to all community groups. This aligns with the principles of participation and empowerment in human development, which allow individuals to participate in, negotiate with, influence, control, and hold accountable institutions that have an impact on their lives (Narayan, 2005).

In addition to promoting inclusive decision-making, strengthening capacity of local structures was recognised as a strategy for broadening the scope of reach for innovative strategies to other members of society. Consider the views of Mrs Nkhoma (lecturer) below:

> The community leaders act as lead farmers and are entrusted with skills and knowledge to enable them to enrol a set of 25 follower-farmers who are not part of the beneficiary list of project beneficiaries. This group undergoes training at demonstration plots and is encouraged to enrol the next group of farmers upon graduating. On average, a training cycle would take three to four months meaning that each farmer can complete three or four cycles in a year. In this way, the partnership broadens the outreach scope such that more communities benefit from the partnership interventions.

Connected with the views above, one of the lecturers explained that local structures play an indispensable role in monitoring the continuity of the adaptation intervention beyond the project scope**.** See Mr Tolani's excerpt below:

> Whether it's the students or other university staff that engages with the communities, we realise that we will not be there for an extended programme at the end of the day. Students graduate and lecturers' projects come to an end. So, to ensure that the benefits accrued are sustained, we engage a strategy of working with village development committees to ensure that interventions must be sustained beyond the actual interface or when the university is not physically present in the community.

The excerpts above show how village development committees ensure sustaining positive outcomes steadily over time. As can be seen in the excerpts above, engaging the village development committees not only ensures that the partnership reaches out to more communities but also contributes to the sustainability of the interventions. From the excerpts, we see how both Mrs Nkhoma and Mr Tolani explain the value of the committee's role in ensuring the interventions' continuity, ownership and sustenance. Mrs Nkhoma's views can be linked to the notion of efficiency, which, in HD terms, implies optimal utilisation of the most cost-effective measures to reach the desired goal (Alkire & Deneulin, 2009). By broadening the scope of reach, the partnership was able to offer the highest impact in terms of reaching out to more people with adaptation opportunities. Mr

Tolani's case demonstrated that involving local government structures was crucial for intervention sustainability.

While lecturers' views on strengthening local leaders sounded commendable, there are concerns about the timing and approach of the process. Community members said that mostly the leadership of these structures is engaged during the initial phase and then towards the end of the project. This means that it would be hard for community leaders to monitor and provide technical support beyond the project timeframe when left out of the actual implementation of the interventions. It appeared that the leadership are not engaged throughout the implementation of the interventions due to resource constraints, time and sometimes scheduling of interventions. Given that university community partnership efforts heavily rely on these leaders for sustainability (Mosier & Ruxton, 2018) and that most rural communities continue to be affected by recurrent climate threats manifested in floods and droughts (GoM, 2019), one would expect universities to continuously engage them for the purpose of strengthening their skills to oversee the operations of the partnership. The major problem with minimal involvement of the local leaders is that it locates local structures' leadership as partial agents in the development process. Such an understanding has the potential to demotivate local structures' commitment to spearheading the sustainability of the interventions.

The partial involvement of local structures in the adaptation interventions was further confirmed by the perspectives of some community members who admitted that even community members are less involved in the adaptation interventions. They argued that needs assessment exercises do not happen frequently or are not conducted in sufficient detail so they fail to incorporate emerging issues and clarify the community's role. The argument is that by allowing active participation, communities would better understand their expectations and easily identify entry points for their engagement. Miss Assani (Pondamali) expressed the need for the university to consider inclusive decision-making in the way partnerships are operationalised. She explained:

> I am sure if you ask around, most community members will struggle to articulate their role in climate adaptation partnership work which makes it even more difficult to appreciate the relevance of university ideas, knowledge, and skills. What I think the university can do is consider laying the groundwork by conducting wider

> consultations with us and allowing us to contribute our ideas on what should be done. In this way, we feel recognised, trust them and establish a solid foundation for collaboration. (Miss Assani, Pondamali).

Miss Assani's views suggest the university must take the lead in ensuring a systemic change in a way partnership is operationalised. As can be seen from the excerpt, one way is through wider consultations, that involve the active participation of communities. It appeared that wider consultations would help the university and the community to critically reflect on their role in the adaptation partnership.

7.2.3 Establishing alternative pathways for accessing agricultural extension services

All community members emphasised the relevance of university-community partnerships in supporting communities with agriculture extension messages as key in supporting climate adaptation efforts. To highlight this significance, one community member said:

> There is only one government extension worker who rarely visits us. We know he is overwhelmed. So, we have been relying heavily on university students to help us with farming and climate change information. (Mrs Khoza, Mkwinda)

Lecturers reiterated the argument that in the absence of government extension staff, communities can rely on university students and staff to access agriculture and climate-related knowledge and skills. Mr Mtaya (lecturer) said:

> The agriculture extension workers who are employed to support communities are not enough. They hardly reach all the farmers. This is why the partnership between the university and community is seen as one way to bridge this gap…our students are keen and always ready to support the communities.

The excerpt above highlights the relevance of university-community partnerships in supporting and addressing societal challenges. Specifically, they build on Boyers' (1990) model of scholarship in which he posited that universities should not be viewed as entities merely situated within a community but rather contributing to the well-being and advancement of the community. The observation comes against the backdrop of Malawi adopting the pluralistic, demand-driven approach to extension, which is a method of agricultural extension that allows a diversity of service providers, including private institutions, to offer their unique expertise to farmers (FAO, 2015; Masangano & Mthinda,

2012). The approach was employed to respond to the challenge that most farmers are not reached with climate extension messages[13] delivered by government staff. For instance, a study by Ragasa and Niu (2017) found that only 14 percent of farmers receive agricultural extension services [14] from government staff.

In responding to the specific alternative agriculture extension pathways, lectures and communities mentioned issues related to the provision of technical skills for climate change adaptation. For instance, lecturers highlighted capacity-building initiatives that were meant to empower communities and further adopt climate resilience technologies. One of the lecturers said:

> With support from the Norwegians, we have built the capacity of farmers to manage food production and the environment in such that they are mindful of climate change, build resilience, and also promote technologies or solutions that can help them to help cope, mitigate, the challenges that are associated with climate change. (Mr Mtaya, lecturer)

Realising the gender-differentiated approach to climate change response and that climate change exacerbates existing vulnerabilities and inequalities at the community level, some interventions have been designed to target women and young girls due to their roles in agriculture and household. One community member explained:

> We have received training on growing cash legumes such as soybeans and groundnuts, which men find unproductive as they focus on tobacco. Other things we have learnt are making chitetezo mbaula (energy cooking stoves) and briquettes to conserve the environment. (Mrs Malata, Chiseka)

[13] Information, guidance, or recommendations specifically designed to educate and inform individuals, communities, or organisations about climate change and its impacts

[14] According to the Malawi National Agriculture Extension Policy, extension refers to a system of agricultural support and programmes designed to assist farmers in improving their farming practices, increasing agricultural productivity and ultimately enhancing food security and rural livelihoods.

On the other hand, communities explained that climate information in regard to the scheduling of the agricultural calendar, such as knowledge on how and when to plant, was viewed as a key agricultural extension service:

> Students have demonstrated to us on how we should plan the agriculture calendar from preparing the land to harvesting. The plan is linked to the agriculture events so that we should tally with the rainfall pattern. (Mrs Msowoya, Pondamali)

The views presented above demonstrate that while the government is perceived as the primary service provider, the staffing challenges create opportunities for universities to offer agricultural extension services to communities, thereby lessening the burden on government staff. In the excerpt above, we can observe how this partnership has maximised university resources to ensure that communities are reached with agricultural extension information. Based on the HD paradigm, maximising the use of resources is aligned with the principle of efficiency. Efficiency is evident when development initiatives demonstrate the optimal utilisation of the most cost-effective measures to achieve desired goals (Alkire & Deneulin, 2009). In this case, the partnership has leveraged its existing resources to provide agricultural extension services to communities. This implies that were it not for the partnership interventions, individuals such as Mrs Msomali and Mrs Malata would have been unable to access climate information, which might have impeded their ability to make well-informed decisions concerning climate adaptation.

While acknowledging the provision of alternative pathways to agricultural extension to communities, participants cautioned about the sustainability of the efforts in terms of funding. They explained that universities must advocate for financial autonomy and diversifying funding sources, which would encourage academics to prioritise more interaction with vulnerable communities. Support staff felt strongly about challenges such as negotiating for more funding for community consultations and research dissemination to communities, which Mrs Nkhata below described as costs that donors do not prioritise. Related to this, a support staff participant explained that most of the available funding is grants which are short term and give little room to ensure the active participation of communities:

> If the university would allocate separate internal funding towards community engagement, we could be talking of more interface with communities, which is critical in climate adaptation. Unfortunately, the grants sourced are not enough to conduct such rigorous processes, such that staff focus on deliverables such as articles and reports. The university must take initiatives to allocate internal funding towards community engagement as a demonstration of its commitment or further engage the private sector to support such initiatives. (Mrs Nkhata, support staff)

What is key in this excerpt is the realisation that universities should diversify sources of funding to avoid relying heavily on donor funds, which at certain times do not provide enough room for proper community engagement. Similar to this is the proposal for the university to consider establishing and allocating internal funding towards community engagement efforts.

7.2.4 Enhancing social cohesion

The partnership between universities and communities has strengthened ties and relationships, resulting in increased social cohesion among people from diverse backgrounds. Lecturers said that university-organised field days allow diverse local communities to participate in various activities and promote interactions for individuals from diverse backgrounds to connect, share ideas, and develop relationships. As a result, the field days strengthen ties between the university and the surrounding community. This engagement fosters a sense of belonging and collective identity, contributing to social cohesion:

> The entire day is dedicated to allowing communities to engage in conversation with each other and the university participants, allowing them to share ideas on how to integrate new knowledge and technologies on adaptation to climate change. From such conversations, relations are forged, contacts made and sustained beyond the university's scope. (Mr Tolani, lecturer)

According to Mrs Sagawa, a senior lecturer, field days provide an opportunity for the university to present its initiatives and research outcomes, effectively encouraging dialogue and collaboration between the university and the community. She explained that community members build relationships with one another and with university students and faculty, thereby promoting understanding and respect across diverse groups:

> By showcasing the new findings, the discussion opens up input and debate with communities posing questions on how they can benefit from the initiatives. Such conversations strengthen the bonds and togetherness. (Mrs Sagawa, senior lecturer)

Besides field days, which occur within the university's premises, community members' sentiments suggest that community workshops on climate change adaptation bring the university closer to the community, allowing for personal engagement. Throughout all FGDs, community members explained that these workshops, organised by the university, strengthen personal connections:

> It is a fantastic experience to share the same space and chat about other issues, even if not connected to climate change. Sometimes we get the satisfaction of talking to lecturers. (Mr Dziwe, Mkwinda)

The above reaffirms literature findings that social cohesion is important in university-community partnerships as it promotes cooperation and unity among individuals, which can lead to the resolution of social problems and the development of society as a whole (Nesterova et al., 2019). The common theme from the three excerpts above is that social cohesion would allow participants to develop and exercise certain skills such as networking, critical thinking and leadership and communication. As can be deduced from Mr Dziwe's and Mrs Sagawa's excerpts, the field days create an opportunity for local communities to participate in a university-organised event. Participation is a fundamental pillar within the HD paradigm (Alkire, 2010). It entails that people are offered a space to take part in interventions that shape their lives. Even though the field days show a passive level participation for being university-organised, the opportunity it presents enables communities to be involved in the climate adaptation interventions organised by the university.

Related to social cohesion, students explained that the partnerships promote affiliation between themselves and their communities. Some third-year students expressed a change in their perspective of a given community after a partnership experience, to the extent that they considered staying on after graduation. Two students expressed interest in staying on and continuing to support communities while also undertaking personal

agricultural entrepreneur projects, such as livestock farming. Students' interest in residing in communities would address the brain drain challenge and increase the chances of valuable skills not leaving the area. The students acknowledged the value of friendship created between themselves and their communities during the partnership's interventions as the driving force behind their decisions to stay on. Suzen (third-year student) said:

> I feel I belong here; the people treat me well and I think I can make a home here (…. laughs, the chief offered me land to stay….) to think of how much I can support these communities is beyond my imagination. My project on drought-resistant tomato varieties was not completed because of the short time frame. I wish to stay on and complete the project so that communities see the conclusion of the project.

Similarly, some communities have created bonds with students such that they could organise financial means to invite students for support.:

> In some cases, with good facilitation, communities have been the one supporting the students. For instance, we had a student last year who was supported by the community in terms of transport. This student was helping them address pest and diseases in tomato production. She was staying is Zingwagwa So, the community decided to pay for her transport because she was helping them address a dire need. So, they felt that their tomato was doing very well because of her help in integrated pest management techniques, and they knew she was only a student and decided to help her. So, it also depends on how you they have entered that community. (Mrs Lwazi, senior lecturer)

From a human development approach perspective, this excerpt highlights the importance of community involvement and support in the education and development of students. It demonstrates that communities can play a critical role in providing the necessary resources and support to students in need. In this case, the community recognised the value of the student's work in addressing a dire need related to tomato production and provided her with transportation support. This support not only helped the student continue her work but also allowed the community to benefit from her expertise in integrated pest management techniques. Furthermore, this excerpt underscores the idea that human development is a reciprocal process that involves mutual benefit and collaboration between individuals and communities. The student was able to use her skills to help the community, and in turn, the community recognised her contributions and

provided support to help her achieve her goals. This exemplifies how human development is not only an individual process but also a collective effort that involves the community.

In the earlier excerpt, Suzen seems to suggest that she felt connected and obligated to complete the unfinished project due to the sense of connection developed during the partnership experience. As Walker and McLean (2013) argued, respect and caring for each other promotes connectedness, particularly in areas where vulnerability is deeply entrenched. In other words, it could be argued that such connectedness, which may depend on individual factors such as students' attitudes and behaviour, could foster students' affiliation with the community, ultimately leading to collective action and agency in addressing climate challenges.

7.2.5 Reigniting community interest in university partnerships

Interviews with students underline the idea that the partnership has reignited community members' interest in undertaking partnership interventions, empowering communities to move beyond research fatigue. As mentioned earlier in the literature review (Chapter 2), research fatigue mostly happens when community members feel exhausted or overwhelmed by university outreach functions – particularly when they do not see tangible results from the partnership activities. Students explained that the partnership outcomes have been beneficial to the communities such that more communities have developed an interest in participating in the interventions. Noel (third-year student) explained:

> Earlier, we had problems getting community buy-in support just because they complained that they don't realise many benefits of working with the university. Communities felt they were being used because the university could get information from them and never return for feedback until the next project gets funding.

Related to the above, Chris (natural sciences) explained that community members appreciate the university's efforts in engaging them in implementing partnership interventions so they feel motivated to support the initiative. He explains below:

> From my experience, it was a rough start in the beginning because you would understand the frustration shared. Some community members were tired of students imposing ideas on them and later left the community without finishing the interventions. They felt we needed their input for academic purposes only. Some

> also shared that we promise many things which are never fulfilled. However, the university has ensured that the students conduct a needs assessment before suggesting any interventions to the communities. What it entails is that students go to the community without any ideas on the challenges and solutions, but develop proposed solutions based on the input from communities. This has received a positive response from communities as they can see their ideas being incorporated and eventually implemented (Chris, natural sciences).

The excerpts above provide important insights into how the partnership has transformed community members' perceptions of the university as a knowledge extraction centre to institutions that promote reciprocity and mutual benefits. Students' views suggest communities seem encouraged by the needs assessment process, which regards them as active participants in the interventions and not passive recipients of their development pathway. It is perhaps for this reason that some scholars have emphasised the need for reciprocity within community partnership relationships (Mtawa et al., 2016; Nkhoma, 2015). However, when quizzed to explain the needs assessment process and when community members' views are integrated, students said that sometimes, due to resource constraints, the exercise is not conducted in detail, is rushed, and relies mostly on the views of community leaders. They indicated that needs assessment requires more time and resources to ensure all members are meaningfully engaged.

To address the challenges raised above, lecturers also spoke strongly about how an appropriate curriculum can enhance students' preparedness for supporting rural community adaptation efforts. They emphasised the relevance of curriculum in transforming the university-community partnership paradigm from student-oriented to community-centred. A student-based curriculum relates to what Garett (2008) calls personalised learning as it allows students to decide the learning process, which may hinder the centrality of community needs. As lecturers said, curriculum review would prompt students to critically examine their role in supporting disadvantaged communities and further enhance reflections on how they can spur innovation to support community efforts. Based on her experiences, Mrs Gama (lecturer) noted that the university's oversight lay in assuming that students would inherently know how to apply their theoretical knowledge. She explained the need for a change in approach in the future:

> One area has been on the assumption that by the third year, the students would be able to apply classroom knowledge to practical set-up just because we taught them courses on climate change, project management and rural extension. It has turned out to be one big oversight because these students are not readily prepared as they fail to link theory and practice. In future, we will strive to ensure to ascertain more accurately on aligning students' abilities to understand the application of knowledge into practice. (Mrs Gama, lecturer)

According to Mrs Gama, appropriate student preparation for partnership interventions requires students to be able to apply their knowledge. She shared that often students struggle to link theory to practice, highlighting the need for curriculum review and pedagogical changes to be made in this regard. One of the examples she cited was the need to consider extending students' internship period from four (4) months to one (1) year, explaining that the latter gives enough time for the students to learn extensively about supporting community adaptation interventions.

While reiterating the significance of extended field time, lecturers said that community input is essential in curriculum development. However, discussions surrounding curriculum development often exclude the perspectives of community members and primarily involve academics, government officials, and private stakeholders. This disregard for community views may assume that these stakeholders possess sufficient awareness of the reality and needs of the communities and that their theoretical understanding and experiences alone are enough to develop a curriculum for climate change. To address this limitation, experts recommended that curriculum development establishes strong connections with the communities in which the students will be actively engaged as communities should hold authority over what should be taught to them.

Relatedly, Mr Chilobwe (lecturer) spoke of how the field visits provided insights into the relevance of transversal skills, such as critical thinking and innovation, in determining how students interact with communities in engaging them to pursue interventions. Lacking transversal skills would sometimes limit students' ability to meaningfully engage with communities in understanding the dynamics at a level which mostly shapes the direction of adaptation options to pursue. All interviewed lecturers explained that non-technical skills like facilitation, leadership, and decision-making are crucial for igniting community interest in partnership interventions. He explained:

> When we visit students on attachments, we observe that some students interact with large groups of communities and struggle to engage with them. They lack facilitation and community, which we think should be incorporated into the curriculum. We intend to include rural development courses to ensure that students understand that the process entails doing with communities so that communities are well engaged and involved throughout the process. (Mr Chilobwe, lecturer)

From the excerpt above, the idea of preparing students for community engagement in climate adaptation encompasses a broad spectrum, with the value of transversal skills evident in the process. In this sense, universities ought to consider interpersonal skills in preparing students for climate adaptation work.

7.2.6 Offering economic livelihood opportunities

In meeting the challenges related to household income for communities, the partnership offers economic livelihood opportunities that are directly linked to sustainable natural resources management. This viewpoint was emphasised by support staff, who explained that the partnership links economic livelihood opportunities to natural resources management to ensure that adaptation interventions are sustainable, effective, and durable:

> The idea is to create synergies between systems so that when one option fails, communities should be able to depend on the other. Also, the options should be able to build on each other to optimise returns. If one thinks of beekeeping, one automatically knows that aside from the economic returns in selling honey and other honey products, communities will be motivated to conserve forests. (Mrs Nkhata support staff)

Mrs Nkhata also said that the ultimate goal for creating economic opportunities for communities is to improve income sources so that communities are empowered to resist undertaking unsustainable practices such as charcoal burning. She explained that economic opportunities allow communities to make safer, environmentally conscious decisions:

> Since we embarked on the project supported by the Norwegians, we have facilitated training sessions for community groups which produce briquettes and energy cooking stoves to support communities with environmentally friendly energy sources. The initiative is run on a business model as communities generate income from the sale of the energy cooking stoves and briquettes sold within the

> community. The idea is to motivate communities to refrain from using charcoal and gain extra income for their daily livelihoods. (Mrs Nkhata support staff)

The excerpts above provide isolated examples of how the partnership creates economic opportunities for communities to increase their livelihood. Based on the two excerpts above, it can be argued that creating income and providing livelihood opportunities for farmers is critical for ensuring that they are better equipped to adapt to the impacts of climate change while improving their overall quality of life.

The economic skills offered by students positively influence the lives of communities. For instance, community members explained that aside from the nutritional benefits of backyard gardening, they were able to save money that they would have used to buy vegetables and fruits:

> I no longer buy vegetables from the market; with a backyard garden that I irrigate using a small canal, I grow vegetables and fruits at home and use the money for other needs. (Miss Songezo, Chiseka)

In a similar vein, Mrs Nyamu, a resident of Mkwinda, has reported that she capitalises on her backyard garden's profits during the dry season when there is a higher demand for vegetables. She utilises the irrigation skills she has acquired from students to irrigate her garden, and subsequently sells the vegetables to a local market:

> Most of the vegetables sold during winter are initiated to meet the growing demands of vegetables in winter. Students work with communities to design roof water harvesting technologies that allow communities to irrigate backyard gardens for market purposes. Accessing extra income gives me the privilege to use the money to access what I could not afford. (Mrs Nyamu, Mkwinda)

In the above excerpts, both Miss Songezo and Mrs Nyamu exhibit determination in generating income from the backyard gardening skills they learned from the students. Their resolute drive and passion reflect their agency to pursue initiatives they regard as important. Sen (1992, p. 51) describes agency as “what a person is free to do and achieve in pursuit of whatever goals or values he or she regards as important”. As we can see from Mrs Nyamu’s excerpt, the extra motivation to generate income for other needs pushed her to exercise her agency in undertaking backyard gardening. This further relates to empowerment in terms of human development, as the process allows

communities to access resources and take control of their own destiny. Oakley (2001) describes empowerment as the real ability to effect change. Therefore, both excerpts above show Miss Songezo and Mrs Nyamu making decisions that advance their needs.

7.2.7 Fostering coordination and collaboration

Coordination and collaboration lead to improved climate change adaptation outcomes (McCowan, 2021). Relatedly, the general perception of lecturers was that partnerships for climate change adaptation foster coordination and collaboration both within the university system and between university and community partners. At the university level, support staff explained that the Programmes Coordinating Office (PCO) and Directorate of Research and Outreach (DRO) coordinate in implementing climate adaptation interventions. Consider the excerpt below:

> These two offices were opened to coordinate all the research and outreach activities for the university. So, the first coordination level it's within that makes sure that all the departments, whatever research and outreach programmes at departments, faculties have the need to be known and recorded by the office, to make sure that we are avoiding duplication and informing others what we are doing. Because there are times you find the faculty of development studies doing something, the same thing also done by the faculty of agriculture or also the faculty of natural resources. So, there have been that kind of duplications, so this office is largely there to coordinate that, to make sure that we know who is doing what. (Mr Jimu, support staff)

The need to work with locally instituted structures is often linked to sustainability and ownership of development initiatives (Preece, 2016). Based on discussions with local community members, the study findings showed that the partnership fosters coordination of local development structures between the village development committees, area development committees, and communities. At the local level, village committees play an irreplaceable role in managing partnership interventions by convening community members to contribute to formulating implementation plans for climate adaptation efforts. One of the community members said:

> They assist and monitor partnership activities to ensure their long-term success. Sometimes they also solicit and transmit communities' demands for inclusion in the top-level discussions whether at the area development committee level of with the university on how communities can be supported. (Mr Kangola, Pondamali)

Despite these excerpts above demonstrating coordination and collaboration, insights from lecturers and community members revealed that the level of coordination is just superficial and theoretical. For instance, lecturers pointed out the inconsistency of two departments employing different modules, despite both departments aiming to equip students for adaptation work. One of the lecturers explained:

> Imagine two departments from the same university training students for the same type of work but using different module systems. You wonder why each department want to do things their way, employing their lecturers, and developing their modules yet both are preparing students for the same thing. (Mrs Nkhata, support staff)

Similarly, at the local level, community members revealed that the village committees can constrain community members' ability to express their ideas due to systemic community politics. One community member said the partnership needs to look beyond the committees to engage more with the people:

> The university should know that the committees are responsible not only for being able to identify problems in the village but also for creating an environment where the community feels confident raising problems or concerns with committee members. Sometimes, people are not free to express themselves for fear of being viewed otherwise by the leadership at the local level. (Mrs Chipwa, Pondamali)

These excerpts show that while the partnership fosters coordination and collaboration at both the university and community levels, participants identified gaps in coordination which affect efficiency in supporting adaptation partnership work. Efficiency is described as the optimal utilisation of the most cost-effective measures to reach the desired goal (Alkire & Deneulin, 2009). In the case of the university, as can be seen in Mrs Nkhata's excerpt, while both departments are capable of training their students, the partnership would benefit more if the departments pooled resources to ensure that the partnership offers high-impact interventions that would empower communities to meaningfully advance climate adaptation efforts. Equally, at the community level, despite village development committees fostering coordination, the uneven power issues constrain communities' expression of their views.

Through coordination and collaboration, the partnership would foster transformative approaches that would enhance community well-being. According to support staff, meaningful community well-being entails that communities can critically assess and adapt adaptation options that respond to local circumstances, not simply replicate them. Mrs Nkhata explained:

> What we see mostly is that community just wants to replicate the technologies as transferred from the university counterparts. That's not helpful because contexts and needs change. The community must be supported to critically assess on their own, learn from the skills and make informed decisions on options to pursue.

The excerpt from Mrs Nkhata seems to suggest that partnerships must focus on transforming rather than transmitting adaptation information to allow communities to internalise the skills and make informed decisions depending on contexts and emerging trends. Learning and adapting to climate trends are evidence of empowerment as they demonstrate communities expanding their abilities to undertake decisions they value.

Having discussed views on how partnership contributes towards community well-being, and having identified the associated gaps that limit full partnership contribution, the table below provides a summary of partnership contribution to community well-being, the valuable skills enhanced, gaps identified and role of university in ensuring that the adaptation partnership contributes to community well-being.

Table 7-1 Summary of partnership contribution to community well-being

Partnership contribution	Community skills enhanced	Gaps observed	Role of university
Multiple adaptation options	– Adaptive capacity – Critical thinking – Leadership – Reflective and thoughtful	– Piecemeal approach – Coordination – Local knowledge integration	– Interdisciplinarity – Skills and knowledge – Link local and scientific knowledge – Foster positive thinking
Strengthening established local government structures	– Effective communication – Collaboration – Open mindedness	– Partial local engagement – Sustainability	– Inclusive decision making – Foster systemic change
Alternative pathways for agricultural extension service	– Critical thinking – Effective communication, capacity building, and problem-solving	– Funding and sustainability – Inefficiency in resource use	– Capacity building – Resource diversification – Resource optimisation
Offering economic livelihood opportunities	– Entrepreneur skills – Critical skills – Collaboration	– Skills	– Capacity building – Explore funding sources
Fostering coordination and collaboration	– Effective communication, negotiation, and problem-solving	– Poor coordination – Lack of synergies – Piecemeal approach	– Capacity building – Systemic change
Social cohesion	– Networking, critical thinking, leadership, communication, and collaboration		– Knowledge exchange platforms
Reigniting community interest	– Critical thinking, innovation, facilitation, leadership		– Dissemination of findings – Documenting best practices

From a HD perspective, Table 7.1 above provides a summary of the partnership contributions to community well-being in the context of climate change. It highlights the community skills that are enhanced through university-community partnerships and the gaps that are observed in the implementation of these partnerships. The table also identifies the role of the university in addressing these gaps and enhancing community skills. For instance, the first contribution identified in the table is the provision of multiple adaptation options, which enhances community adaptive capacity, critical thinking, leadership, and reflective and thoughtful skills. However, gaps observed in this partnership include a piecemeal approach, coordination challenges, and the need to integrate local knowledge. The role of this partnership is to foster interdisciplinarity, skills and knowledge, link local and scientific knowledge, and foster positive thinking.

The summary presented above also allows for a critical assessment of the partnership's effectiveness in enhancing community well-being. This enables stakeholders to identify gaps and challenges in the implementation of the partnership and to develop strategies to address them. By reflecting on the contributions and limitations of the partnership, universities can develop more effective approaches to engage with communities in advancing better adaptation strategies. Additionally, reflection on the dynamics presented in Table 7.3 promotes learning and knowledge-sharing between universities and communities as universities can develop a better understanding of community needs and preferences, which can inform the design of more effective adaptation strategies.

7.3 Conclusion

Different perspectives on how partnerships contribute to community well-being have been discussed with lecturers, support staff and third-year students. The chapter has shown that the lecturers felt that partnerships contribute to community well-being by providing multiple options for adaptation, strengthening local structures, and providing an alternative extension service system. Support staff said the partnership contribution to well-being centred on economic opportunities and social inclusion while students mentioned reigniting communities' interest and promoting student community affiliation. While these contributions have been acknowledged and discussed in relation to the HD paradigm, the views of the participants also demonstrated gaps that suggest the need for

more action to ensure that the partnership meaningfully contributes to community well-being. Lecturers and support staff also offered their views on universities ensuring a meaningful partnership contribution to community well-being, encompassing elements such as linking scientific to indigenous research, promoting inclusive community engagement, advancing adaptation and not replication and responsive curriculum and pedagogy on climate adaptation. With community well-being linked to the concept of HD, the next practical question to consider is how the HD paradigm, which is seen as people-centred and foregrounds the richness of human life, can inform the design of a human development-centred university-community partnership model for climate adaptation in Malawi. This will be the next chapter in which I aim to theorise how the pillars of HD such as efficiency, participation and empowerment, equity and sustainability can inform the design of a human development-centred partnership framework for climate adaptation.

Chapter 8 : Centring human development in university-community partnerships for climate adaptation in Malawi

8.1 Introduction

In the previous chapters (5, 6, and 7), I presented a comprehensive analysis of the perspectives of various stakeholders (academic staff, support staff, experts, third-year students, and community members). In Chapter 5, I discussed the motivation factors for the existing partnerships and further delved into what existing partnerships can achieve. Chapter 6 detailed the key issues to prioritise in the adaptation partnerships. And in Chapter 7, I discussed the contribution of the partnership to community well-being. Drawing upon the insights gained from the analysis, this chapter weaves the findings together with the conceptual framework discussed in Chapter 3 to theorise a human development-centred partnership for climate adaptation in Malawi. The chapter addresses the fourth research question:

> How can the human development paradigm foster the design of a university community adaptation partnership that enhances community well-being in Malawi?

In answering this question, this chapter makes a case for human development-centred partnerships, which focus on creating an enabling environment for local communities to foreground their adaptation interests by making choices to learn and engage in climate change adaptation strategies that improve their well-being. As discussed in Chapter 3, the human development paradigm embraces, as an essential point of departure, the idea of championing the development of the people, by the people and for the people (Gomez, 2003). Therefore, a common thread in this theorisation is prioritising people's interests in development, which implies framing partnerships that place importance on expanding individuals' ability to be involved in partnership creation and adaptation processes, as well as increasing the impact of these partnerships for local communities.

This line of argument is informed by the empirical evidence presented in the previous chapters. Chapter 5 findings shows that university-community partnerships for climate change adaptation offer a plethora of opportunities to advance community well-being.

However, these opportunities lack details on how communities' capacities can be expanded to become agents of the adaptation process. Consequently, a paradigm shift is required, whereby opportunities for climate adaptation partnerships should no longer be viewed solely from the standpoint of policy and impact on the university functions but also from the perspective of empowering communities to participate in the climate adaptation discourse and implementation. On the other hand, Chapter 6 highlights participants' preference towards prioritising actions that harness relationships between universities and communities and strengthen social connections, address the diverse climate needs of local communities, and foster climate awareness and education. And finally, in Chapter 7, the common thread that emerges is that while adaptation partnerships enhance community well-being by providing multiple adaptation options, income streams, and valuable skills, they do not entirely allow communities to exercise their agency or actively participate in decision-making and intervention processes.

This chapter consolidates the empirical findings but now looks at the data through a human development lens. The chapter contains three main sections. The first section integrates insights from the empirical data and the conceptual framework presented in Chapter 3 to make a case for a human development-centred framework for climate change adaptation in Malawi. The second section discusses the role of bounded agency across the conceptual ideas of the proposed framework. The third section presents the proposed framework comprising of five components; these describe what human development-centred partnerships could look like. This section is followed by the conclusion.

8.2 Towards a human development centred university-community partnership

In this study, conceptualising university community partnerships modelled towards the human development paradigm entails reflecting on how partnerships foreground local community needs and enhance their potential to improve climate well-being and adaptation. Such a reflection necessitates a focus on creating opportunities for genuine collaboration between communities and universities that would direct the outcomes of the partnership into transformative pathways for co-designing adaptation interventions for rural communities. For instance, instead of a partnership undertaking a top-down planning

approach to designing climate responses, the partnership would need to foreground the idea of prioritising and involving local communities in discussions, decision-making, and actions related to addressing the various adaptation challenges encountered. Furthermore, it includes integrating the adaptation needs of communities and their valued priorities (as discussed in Chapter 6) such as building relationships, addressing immediate livelihood challenges, participating in planning and monitoring and being able to access adaptation opportunities. These would need to be prioritised while leveraging university resources and expertise.

While Mtawa (2017) and Boni and Gasper (2012) have offered valuable perspectives on applying the human development paradigm in community engagement, most of the work on higher education concentrates on applying the human development paradigm to the realm of education and pedagogy (see Gasper and George 2010; Walker 2006; Nussbaum 1997). This study, in alignment with Boni and Gasper (2012) conceptualises the human development paradigm broadly, such that its application goes beyond a focus on quality in teaching and learning to encompass additional functions such as social engagement. I do this by advancing a list of four components modelled from the human development approach namely: equitable relationships (equity); inclusive decision-making (participation and empowerment); optimal resource use (efficiency) and sustainable community well-being (sustainability). These concepts form the components from which the human development-centred framework is constructed. The chapter further discusses the role of bounded agency in operationalising these four components to fruition, considering the interplay of the relationship between participants' motivations and the structural and institutional challenges present in partnership formation. The next section provides a detailed exploration of the four components drawn from the human development paradigm and reflects on how a partnership would be structured if modelled on these components.

8.2.1 Equitable relationships

The conclusions drawn from analysing the empirical data in Chapters 5, 6, and 7 suggest that most tensions in existing partnerships stem from a lack of equity in how partnerships are established and organised. Equity in human development is a concept that refers to

justice and fairness in accessing opportunities and outcomes of development processes (Alkire, 2010). It departs from equality, which treats everyone equally, recognising that some individuals encounter unequal opportunities that require additional support to maximise their potential. Since all participants linked the lack of equitable relationships in the partnership to the observed challenges in partnership functionality, it can be argued that equitable relationships lay the foundation for the flourishing of other human development values, such as participation and empowerment, efficiency, and sustainability.

Chapter 5 provided evidence of a lack of partnership structures at the community level to empower and represent the views of communities in adaptation partnerships. With such omissions, it is likely that the partnership encounters challenges such as what Godrie et al., (2020) call epistemic injustice, which occurs when community members are not given equal opportunities to participate in decision-making processes or when their knowledge and expertise are not valued or recognised by the university. As a result, the observed power imbalances perpetuate systemic inequalities in how the university interfaces with communities in advancing climate adaptation interventions.

Despite the country's call for universities to engage in collaborative endeavours with local communities to confront climate change challenges, universities are yet to fully articulate the role of communities in the adaptation partnership process (GoM, 2019). This deficiency implies that the organisational structures, education curricula, and research methodologies do not reflect fairness and inclusivity from the community's perspective. The conclusions drawn from Chapter 5 substantiate the assertions that there are no formal agreements or established structures such as committees at the local level and that the focus on climate adaptation is primarily centred around the educational and research functions of the university and to the benefit of the university. The observations above are further exemplified by the narratives of Mrs Sagawa and Mr Tolani, whose views underscore the lack of community-oriented structures guiding partnership functions and the primacy assigned to teaching and research over partnership interventions (refer to Chapter 5). In such situations, the potential for communities to critically engage in preferred adaptation initiatives is significantly constrained. Consequently, it means that even though community members participate in adaptation interventions, their ability to

influence decisions is limited. Therefore, there is a discernible rationale to advocate for equitable university-community collaborations that foster the co-creation of knowledge and mutuality in partnership interventions. Such calls are not only well-founded, as argued by McCowan (2021), but also contribute substantively to the scholarly discourse on involving communities in university-community partnerships to address societal challenges such as climate change. For instance, Smith et al. (2017) concede that:

> Equitable partnerships must promote fairness, justice, honesty, and a commitment to shared authority and respect for one another's goals to be used as guiding principles for reciprocal partnerships.

Thus, in making a case for a human development-centred partnership for climate change adaptation through equitable relationships, the university ought to reflect on strategies to support local communities in establishing and maintaining fair partnership structures. These structures are envisaged to serve as pivotal conduits that effectively capture community perspectives and function as central hubs in negotiation processes concerning partnership interventions. This is because universities are well-positioned to capitalise on their resources to advance the cause of adaptation sustainability at the local level (Filho et al., 2023; Swearingen White, 2014). It is crucial to underscore that while the creation of such structures is imperative, it is not an end in itself but rather a prerequisite for achieving equitable dynamics between universities and communities. As posited by Brush et al. (2020), the existence of these structures forms the bedrock for unified partnership processes, encompassing facets such as the management of community expertise, financial allocations, coordination, and ongoing monitoring requisites. While scholarly writings, such as Suarez-Balcazar et al. (2015), Amey and Brown (2005) and Serrano-Garcia (1990), provide examples of how universities can assist in establishing community structures, one expert reflected below:

> Community entry is very crucial in establishing structures as it lays the foundation for the other processes. The university needs to initiate contact with local leaders, including chiefs to gain a comprehensive understanding of the cultural, social, historical, political, and economic context within the community. (Mr Mbewe, expert)

On the other hand, maintaining local structures would entail the university and communities undertaking periodic reflections to assess partnership functionality in terms of agreements to ensure that they remain relevant and effective to the climate adaptation partnerships. Further, it involves periodic assessment of the functionality of instituted structures to identify gaps and offer capacity-building initiatives to strengthen community skills in managing adaptation processes. With functional structures at the local level, partnerships can create spaces for community critical input in partnership decisions, create linkages at the local level and initiate more sustainable actions, such as raising awareness of climate adaptation concepts and ensuring the availability of climate information services at the local level through instituted structures.

The second facet involves renegotiating partnership terms between the university and communities through formal written agreements. These agreements serve as indispensable instruments for delineating commitments from universities and communities, engendering transparency and effective expectations management. While resource contributions, organisational ethos, and individual motivations may differ, the power of partnership rests on harnessing each partner's key strengths.

An equitable university-community adaptation partnership would allow communities to engage in critical questioning and deliberation of decisions such as funds management, student partnership structure, and assessment. These changes, while challenging, would address current issues where partnerships are characterised by top-down planning and a student-focused approach with minimal or no community involvement in decisions on funds management and budget allocations (refer to Chapter 7). As McCowan (2021) argues, understanding climate change dynamics does not only occur in a classroom setting but can also be self-directed or informed by input from sectors beyond the university environment. Implementing such changes would deconstruct dominant scholarly narratives that universities are detached from their communities and are seen as high towers of knowledge equipped with skills to diagnose and solve community problems (Fongwa et al., 2022).

Building upon the foundation of equitable relationships, inclusive decision-making emerges as another crucial component in the new framework for university-community partnerships and is discussed next.

8.2.2 Inclusive decision making

Inclusive decision-making refers to the process of involving diverse stakeholders, including community members and representatives, in the decision-making process on adaptation partnerships. It ensures that all voices and perspectives are heard and taken into account when making decisions related to climate adaptation interventions. This component is drawn from the human development principle of participation and empowerment. According to Alkire (2010), participation and empowerment refer to enabling individuals or communities to take control of their lives, make decisions, and take action to improve their circumstances. Further, embedded in the concept of participation and empowerment is that people should be treated as both the means and ends of the development process. This means people should take part in decision-making at every stage of the development initiative affecting their lives (Alkire, 2010). Participation is, therefore, the hallmark of partnership interventions as it fosters adaptation outcomes (Preece, 2016; Vogel et al., 2010) and is strongly linked to empowerment and sustainability (Mtawa, 2017; Peterson, 2009; Munter, 2002). Thus, in the context of this study, inclusive decision-making component underpins the participation and empowerment principle in the human development approach. Its aim is to empower and transform local people from mere recipients of adaptation interventions to active participants, equipped with knowledge and skills to make informed decisions in undertaking desired adaptation strategies.

The research findings presented in Chapter 7 offer evidence of how the partnership underscores the participation of communities in adaptation interventions. Specifically noteworthy was communities' participation in demonstration plots and the transfer of technologies to individual farms. However, to ensure inclusivity of the communities, they needed to be more actively involved in decision-making processes from the initial stages of project design or conducting needs assessments. Communities exhibited traits of participation and empowerment suggesting action for social change and innovation, however, the level of participation and empowerment does not fully align with the concept

of participation and empowerment in human development. It is implemented unsystematically and interpreted loosely without encompassing the genuine notions of transformation as stipulated within the human development paradigm. For instance, focusing on community participation during the implementation stage portrays communities as recipients of preconceived adaptation designs initiated by the university, further cementing findings that position the university as an authority while communities maintain their status as recipients (Preece, 2016; Vogel et al., 2010). On the contrary, in human development terms, participation and empowerment ought to be inclusive and transformative, thus implying communities are involved in all stages of the process and take control of the adaptation choices and undertake actions to address their adaptation challenges. Through the implementation of non-extractive and inclusive approaches, universities can dismantle power dynamics that create a divide between them and neighbouring communities.

To achieve successful adaptation initiatives, human development-centred partnerships should prioritise inclusive decision-making to give people a sense of ownership in the adaptation discourse. This ownership ensures that development initiatives are effective and accountable (Hirai, 2020). Although participation alone does not guarantee successful adaptation outcomes, the transformative potential of community members who accept and undertake adaptation initiatives despite not being involved in the design, presents a potential opportunity for positive outcomes (refer to section 8.2.1). Therefore, universities ought to navigate the challenges such as leaving out community views in the design and planning stages as presented in Chapters 5 and 7 to conduct inclusive consultations. This entails developing contextual strategies to open up spaces for community input beyond specific phases, such as active community voice in budget negotiations, needs assessments, intervention design stage, curriculum and content of university community outreach work, and contributing to designing the structure of students' internship assessments. Preece (2011) argues that community active participation and empowerment align with Julius Nyerere's socialist ideologies, which advocate for direct connections between universities and village communities. Hence, it is crucial to consider the participation of village leaders in the academic assessment of students' internships, among other pertinent considerations.

Enhancing inclusive decision making within the human development-centred partnership is to reflect on the barriers that inhibit active community involvement in partnership interventions. Chapter 5 highlights some examples where the institutional and societal hierarchies, present in the partnerships' environment, are conveyed or integrated into the partnership itself. As argued by Strier (2011, p. 6) "university community partnerships may replicate or even deepen unequal and oppressive relations between marginalised and elite groups" which might lead to mistrust and constrain participation. Therefore, ensuring inclusive decision making is to reflect on these existing patterns to determine whether they act as enablers or whether they inhibit active participation. Also, while thinking about inclusive decision making, it is also important to reflect on critical insights raised in Mtawa's (2017) thesis on the necessity to analyse the influence of material and social inequalities between students and communities as a potential barrier to inclusive decision-making. Notwithstanding the validity of such concerns, I argue for the partnership to consider contextual dynamics to promote equity in partnership processes, such as analysing and acknowledging community skills, and to invest in imparting skills for community engagement and facilitation to avert possible barriers explained above.

The implications of inclusive decision-making in adaptation partnerships are evident in two ways. First, its instrumental aims are to reflect local knowledge and to target the marginalised (e.g. the poor, the disabled, and women) by involving them in the development process (Chambers, 1997). Second, its intrinsic aims are empowerment and enhancing subjective well-being by encouraging people to socialise and aspire for more significant social change (Frey, 2008; Helliwell & Putnam, 2004). This would cultivate broader goals, such as the community's ability to integrate partnership adaptation plans into community and district development plans.

As discussed earlier, inclusive decision-making is critical for ensuring that all stakeholders are actively engaged in the partnership process. However, it is equally important to ensure that the resources utilised in the partnership interventions are optimised to achieve the desired outcomes, as discussed in the next section.

8.2.3 Optimal resource use

Optimal resource use refers to the efficient and effective allocation of resources, including financial, human, and material resources, to achieve the goals of the partnership. Drawing from Chapter 6 study findings, adaptation partnerships continue to underutilise community and university resources and do not respond to the dynamic context and needs of the communities. For instance, optimal resource use is constrained by inadequate time and resources allocated to students for field operations and insufficient logistical support to staff for supervision. As a result, the student community internships have been branded as student-oriented and short in duration, thus focusing on students' academic goals at the expense of community adaptation needs. The study further revealed that lecturers tend to prioritise the assessment of students' final adaptation outputs due to limited resources, thus overlooking the significance of the underlying processes that can shed light on aspects such as community participation and empowerment.

Challenges in governance and coordination within the university, across departments and between the university and the coordinating office for the programmes, were evident in Chapter 7. Also evident is that the university has made limited efforts to share its resources with local communities, and there is minimal interest in scaling up local adaptation innovations.

However, when considering the role of universities in the resource use component, it is imperative to reflect on the paradigm shift in expectations placed on them. It is crucial to exercise caution in placing additional pressure on universities, as they are already burdened with significant responsibilities. This is because although universities' contributions to society are invaluable, they have limitations and cannot be expected to fulfil every role. Thus, in conceptual terms, modelling optimal resource use in the human development-centred partnership should manifest in the following dimensions.

First, it entails that universities and communities prioritise laying the foundation for fairness and inclusivity in the leadership and governance of resources, both human and financial. This is necessary to counteract perceptions held by communities that universities engage with them solely to fulfil their teaching and research obligations (Cooper & Orrell, 2016; Strier, 2010). For instance, it is imperative to enhance

collaboration between the Program Coordinating Office (PCO) and the Directorate of Research and Outreach, enabling them to exert their influence on policymaking and overall coordination of all adaptation initiatives undertaken by the departments. University leadership plays a pivotal role in promoting a culture of social change and seeking possibilities of resolving problems from within in addressing climate adaptation challenges (see Torkzadeh & Mohtaram, 2022; Leal Filho et al., 2021). Therefore, effective university leadership would further harness the university resources for greater outputs. As Leah Filho et al. (2023) noted, climate change is broad and must be addressed at an institutional level. Practical examples include harmonising students' pedagogy and curriculum delivery practices on climate adaptation and partnerships between departments to create synergies and linkages, which would address coordination challenges identified in Chapter 7. Further, the student's internship approach needs to be more flexible to allow students to plan and execute interventions based on context and time frame.

At the local level, universities ought to collaborate with local community-based organisations (CBOs) to foster dialogue, day-to-day operations of the partnership activities, continuity, and awareness of the adaptation interventions beyond the project implementation phase. This would address the challenge imposed on overwhelmed government extension staff to supervise and ensure the continuity and sustainability of the interventions. Furthermore, undertaking periodic cost-effective measures, such as asset[15] mapping and mobilisation exercises, to discover communities' current and potential assets as the bedrock for building adaptation strategies. For instance, the availability of local awareness groups, such as radio listening clubs in the community, would be an asset in creating opportunities for community activism to develop a culture that values sustainability and environmental stewardship. As Berg-Weger (2020) noted, asset mapping and mobilisation at the community level is empowering and transformative as it allow communities to start seeing possibilities of problems from within.

[15] Kretzmann and Mcknight (1993) defines asset mapping as a procedure of ascertaining what assets the community have and the contribution these can offer.

Optimal resource use would also be manifested in harnessing traditional knowledge as the foundation for local adaptation partnerships. As per the agreement at the 21st session of the Conference of the Parties (COP 21) in Paris, countries acknowledged that adaptation action should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems, to integrate adaptation into relevant socioeconomic and environmental policies and actions, where appropriate. Similar calls are reinforced in the 2021-2022 Human Development Report, which underscores communities' substantial potential to adapt to climate change impacts by drawing on traditional knowledge and skills, passed down through generations (UNDP 2022). Therefore, achieving efficiency within the human development paradigm entails that the partnership reflects on this potential and dedicates resources and time to examining how local knowledge can set the foundation for adaptation. For instance, lecturers said that universities should leverage their experience to link scientific and local knowledge in assessing climate risks. They said that often there is a disconnect between classroom theories that universities advance and what communities value as preferred climate adaptation strategies. In advancing mutual learning, universities must take the lead in explicitly demonstrating how the partnership does not diminish the value of existing local approaches but opens up new, highly responsive, and acceptable adaptation options. One of the lecturers said:

> Communities have survived long periods of climate uncertainty because they could use their local knowledge, take critical steps in implementing decisions concerning their well-being. With progress in scientific research on climate change, the danger is that often scientific research is viewed as superior to local knowledge. Universities must strike a balance in ensuring that the partnership makes use of both scientific and local knowledge or further integrates the two in knowledge production and policy guidance. (Mrs Chirwa, lecturer)

Mrs Chirwa articulates her conviction in the university's role to lead the process of integrating scientific and local knowledge in enhancing partnerships for climate adaptation. She suggests that while the knowledge systems and practices of indigenous peoples are recognised as significant resources for climate change adaptation, they are yet to be used consistently in adaptation efforts. Students' role is equally crucial in local knowledge systems. From the study findings, students' involvement in partnership

interventions entails their commitment, agency, and passion for collaborating and working with communities in designing sustainable adaptation strategies. Hence, local knowledge forms a key component in driving students' understanding of community challenges and available skills and knowledge to tap into. As UNESCO, (2021, p. 67) noted, "Indigenous knowledge systems raise students' consciousness that they are part of the natural community and can draw from the values, practices, and spiritual consciousness that have enabled humanity to live in harmony with the planet for millennia." Thus, to ensure optimal resource use within the partnership, the study envisions rethinking and reimagining curriculum and pedagogical approaches that stimulate universities and instils a fundamentally new approach to unlock students' potential in foregrounding local knowledge as a means to advance climate well-being and human development. Thus, students undertaking partnership interventions need orientation on viewing the two sources of knowledge as complementary and not competing against each other.

The second consideration of optimal resource use in the partnership is the ability to diversify financial resources that spearhead adaptation interventions to mitigate the challenge of over-reliance on donor funds for adaptation partnership interventions. Focusing on diversifying resource mobilisation sources enables the partnership to increase financial stability, enhance access to funding, broaden expertise networks and catalyse innovation and creativity through comprehending different donor requirements. Diversifying the resource base further entails an opportunity for the adaptation partnership to not only focus on the university skills in resource mobilisation but further reflect on how communities ought to harness their skills in innovation and creativity to lobby for funding from the government, the private sector, and other philanthropic organisations/individuals. With communities involved in resource mobilisation, it would potentially increase the bargaining power with donors, government, and philanthropic organisations on the necessity to allocate funding for adaptation interventions.

8.2.4 Sustainable community well-being

Sustainable community well-being is a multifaceted concept encompassing intergenerational equity in the use of resources to optimise natural resources in economic, social, political, and environmental spheres of development. It further involves viewing

the partnership process as a space for the community's ability to critically engage with university stakeholders, exercise autonomy in decision-making on adaptation preferences they wish to engage in and achieve positive outcomes such as high-impact interventions that can be replicated, upscaled and sustained over a long period of time.

The study findings reveal four key sustainability gaps: a monodisciplinary view of climate response within universities, local leadership and ownership gaps, funding diversification, and epistemic injustices characterised by university domination and marginalisation practices. One approach to addressing these gaps is by adopting a systemic view of climate multidimensionality. Universities can promote interdisciplinarity by collaborating between various academic disciplines, such as mathematics, agriculture education, engineering, and nutrition. This collaborative effort harnesses a wide range of expertise to develop holistic, long-term solutions for community adaptation challenges. For instance, Oldakowski and Johnson (2018) provided evidence that the interdisciplinarity of climate change curriculum, such as including climate change in mathematics, "leads to improved learning outcomes of the climate crisis". Similarly, Olsen et al. (2013) contend that an interdisciplinary approach can indeed provide a new understanding of some of the challenges facing climate change. Therefore, a human-development-centred adaptation partnership should foster interdisciplinarity in curriculum design and pedagogical approaches to depart from viewing climate adaptation partnerships from a monolithic view to embrace interdisciplinarity, systemic thinking, cooperation and networks that emphasise the interconnectedness of several systems and factors that take into account the needs and aspirations of universities and communities.

Interdisciplinarity further entails embracing a group approach to community outreach work to ensure the availability of a wide pool of expertise that not only addresses the complex climate challenges facing communities but also fosters innovation and creativity. This approach would address the current challenge of specialised programmes that only focus on one aspect of climate change response. Consider the views of one lecturer who proposed a group approach to respond to the multidimensionality of climate change:

> Some communities share that our students lack content. They ask them questions, and they are not able to respond. They are saying that because as LUANAR we

> have specialised our programmes now. Some of those who graduated with extensions now are not the same they do not have the same content and skills as those who graduated twenty years ago. Because then, you were learning everything, it was a general degree. But now you cannot ask them about any agriculture-related concept, they cannot tell you everything. They don't know much because they specialise in a specific component, let's say animal husbandry, crops etc. So, it's like they are more focused. But is this farmer-focused? He/ she has problems 360 degrees, and this one is only trained 45% of that. (Mr Chibwana, senior lecturer)

Besides addressing climate multidimensionality, also critical in thinking about sustainable community well-being within the human-development-centred adaptation partnership is addressing epistemic injustices to knowledge co-creation. Drawing substantially on Miranda Fricker's (2007) categorisation of epistemic injustice and further writings from Walker and Boni (2020), the study posits that the partnership needs to reflect on addressing the hermeneutical injustices manifested through structural power imbalances existing between universities and communities. As Walker and Boni (2020, p. 5) noted, "hermeneutical injustices turn on legitimacy and on how structural power influences some understandings as legitimate and excludes others if one belongs to a group which does not have access to equal participation in the generation of social meanings". Thus, it can be contended that epistemic injustices generate marginalisation, retard equal participation, and limit epistemic capacities in adaptation knowledge co-creation, consequently leading to the challenges such as the inability of the communities to contribute to knowledge generation as discussed in section 8.2.2 above. Promoting epistemic justice entails challenging and transforming inequitable practices, such as power imbalances between the university and communities, by fostering inclusivity, diversity, and equal participation. This includes reflections such as valuing and incorporating indigenous knowledge systems and opening spaces for marginalised community members to contribute to knowledge creation, thereby advancing ownership and sustainability. Ensuring that local community-based organisations are engaged throughout the entire project cycle for continuity further enhances the sustainability of the adaptation interventions.

Sustainable community well-being further entails setting clear achievable outcomes between the university and communities to ensure both sides manage expectations and participate effectively. These goals ought to be communicated in a manner that is understood and comprehended by all stakeholders. Thus, effective communication serves as the key to sustaining adaptation outcomes. It further entails communities lobbying with the university for capacity-building initiatives in the form of training, workshops, and skill-building opportunities for community members. As Leah Filho et al. (2023) posit, “What is clear is that sustainability initiatives championed by higher education institutions can address both the causes and impacts of climate change, locally and globally.” Therefore, universities ought to build local capacity to empower the community to take ownership of adaptation efforts, reducing dependence on external support. This also helps to ensure that adaptation strategies are tailored to the community's specific needs and challenges. Further, universities ought to advance coordination and collaboration at the university and community levels to ensure that planned strategies are synthesised, build on one another and display synergies. This would mean revisiting strategies for complementarities and reciprocity, developing activities that nurture relations and engaging in partnership prework of jointly defining challenges and their root causes. Thus, university and community systems ought to synch at some level to facilitate dialogue on how adaptation interventions can be designed, undertaken, and sustained.

Lastly, sustaining human development-centred partnerships ensures lobbying for increased and flexible funding sources to reduce the partnership’s vulnerability to budget cuts or changes in funding priorities as highlighted in Chapter 5. As such, the university ought to reflect on developing a partnership resource mobilisation strategy to guide the process of exploring a variety of funding options, including government grants, private foundations, corporate partnerships, individual donors, crowdfunding, and collaborative research funding. It is also important to keep track of progress and report on the achievable impact of current partnership efforts to demonstrate transparency in funds management, which can enhance credibility and attract continued financial support.

Ensuring sustainable community well-being therefore entails that communities are able to exercise autonomy in decision-making on adaptation preferences they wish to engage in. For this to be realistic, it involves the partnership creating a space for the community's ability to critically engage with the university stakeholders.

8.3 Bounded agency as an enabler for human development centred partnership

As discussed in the conceptual framework (Chapter 3) bounded agency is preferred over agency because the concept of bounded agency acknowledges that individuals and communities may have limited power and resources to fully exercise their agency in addressing complex issues like climate change. Bounded agency refers to the intricate relationship between an individual's motivation and the social and territorial structures surrounding them when they participate in learning activities (Evans, 2007). The choice of bounded agency is further reinforced by Archer (2000) findings that while human agency is the linchpin of agency in general, it is crucial to understand how one side of the problem of structure and agency is conceptualized. It therefore implies that structural factors play a crucial role in shaping individual motivation, as a person's perception of their ability to actively engage in learning is influenced by the environment in which they find themselves. Exploring the concept of bounded agency in the aforementioned four components is crucial as it teases out the interplay of how the structure of the partnership not only provides the motivations or barriers to communities who do wish to participate in adaptation initiatives but also affects whether and how communities wish to develop a desire to do so. For instance, community members may choose to contribute and undertake safer adaptation options but may be limited by structural and institutional challenges as discussed in the previous section.

Chapter 5 shows that although communities demonstrated a willingness to contribute and pursue adaptation strategies, their ability to make choices and enact actions collaboratively with the university was restricted because they were not granted a platform to contribute during the planning and design process. Equally, the university participants' quest for inclusive decision-making and strengthening the capacity of local communities was constrained by the limited resources and unavailability of formal channels for contact and dialogue. Chapters 6 and 7 further highlight how institutional challenges such as coordination between departments and the Programs Coordinating Office (PCO), uneven

power dynamics, communication and language barriers in accessing information and institutional bureaucracy present barriers in shaping communities and the university's ability to undertake partnership interventions.

When considering the impact of bounded agency on the four components of the human development-centred partnership framework, it is important to recognise that the community's willingness and dedication to participate in the creation and maintenance of structures can be influenced by decisions made by the university. For example, if the university imposes decisions such as selecting the leadership group at the local level, or fails to provide relevant resources and skills to support desired interventions, the community's desire and commitment to participate may be negatively affected. Further, if the university dominates in setting formal agreements and expectations of the partnerships, communities may feel marginalised and disengaged from the decision-making process. One way the partnership can help unlock this bounded agency is to establish clear guidelines and procedures for institutionalising partnerships, which clearly delineate the roles played by the university and community stakeholders. This approach can ensure that the partnership is focused on achieving mutually agreed outcomes and is accountable to all parties involved. As the university typically possesses greater resources and capacity to support communities (see Leah Filho et al. 2023), it can prioritise community engagement and involvement in decision-making processes to ensure that communities are knowledgeable on the partnership's intentions to advance mutuality and sustainability and how to navigate the institutional barriers associated with the process.

In regard to inclusive decision-making and streamlining resource coordination, navigating bonded agency is to create a safe and supportive environment for consultations where community members engage. This includes exploring a multiplicity of platforms for open communication channels and feedback that considers the inclusivity of marginalised groups. By creating opportunities for dialogue and collaboration, stakeholders can work together to address any challenges or concerns that may arise and can build a sense of shared ownership over the partnership's goals and objectives.

At the university level, partnerships ought to reflect on ways of opening up an inner desire for communities to see reason in the necessity to undertake partnership interventions and navigate the maze around the structural and institutional challenges. This includes capacity-building sessions, redesigning curriculum, community engagement and pedagogy approaches such as experiential learning, storytelling and narrative and participatory action research to prepare university participants on ways in which they can stimulate inner desire in communities to participate in the partnership amidst structural and institutional challenges. As Lotz-Sisitka, (2014) argues educational programs should engage students in problem-solving and participatory learning techniques such as conducting assessments of environmental risks and vulnerabilities. Providing resources to the community to manage their planning and scheduling of interventions, and opening the university resources such as the Programs Coordination Office to support scaling up local innovations to the community would further generate community interest, spur action and offer a platform to harness their agency for contributing to the adaptation discourse (see Chapter 6).

8.4 Proposed framework for human-development centred adaptation partnership

Drawing from the examples provided in the previous discussions, the study offers practical insights into how partnerships framed on the human development paradigm can serve as platforms for opening an enabling environment for communities to participate and undertake interventions driven by community adaptation interests. Juxtaposing views from all interviewed participants show that for the current partnerships to advance a human development-centred approach to climate well-being, the partnership framework needs to foreground opening up spaces for communities to drive the adaptation agenda. The study has found that the current motivations for climate adaptations do not foreground community interests entirely and offer insights on how the partnership can create and optimise opportunities for climate adaptation partnerships. It has further been observed that partnerships need to foreground building relations, managing expectations between universities and communities and further capacity building to raise awareness of communities' role in the partnership. In Chapter 7, the common thread is that while the current partnerships contribute towards climate well-being by offering multiple adaptation options, strengthening the capacity of local structures and offering alternative options for

extension services, the partnership operationalisation does not align to the human development paradigm which eventually constrains communities' opportunity and skills to contribute to the process. Based on the study findings, the perspectives of participants inform the design of the human development-centred framework for climate change adaptation. Therefore, in this section, the idea of a human development -centred partnership is presented as the creation of an enabling environment for communities to foreground their adaptation interests for climate well-being and sustainability. This entails that the partnership ought to foster community empowerment by prioritising the development of community skills and knowledge that are relevant to the community's context and ensure creating opportunities for communities to be involved in decision-making processes related to the adaptation decisions partnership. Equally, the partnership ought to foster a culture of mutual learning and respect between the university and community stakeholders, where both parties can learn from each other's experiences and perspectives.

While the end point of well-being is crucial for university staff and students, the study findings show that the benefits of the partnerships are heavily weighted on the side of thew university rather than the communities. However, this framework suggests how sustainable community well-being would look like if the partnership advances the key four components discussed above to achieve positive outcomes such as high-impact interventions that can be replicated, upscaled, and sustained over a long period of time. Therefore, drawn from the human development paradigm and the conceptual components discussed above, the summarised framework is presented below:

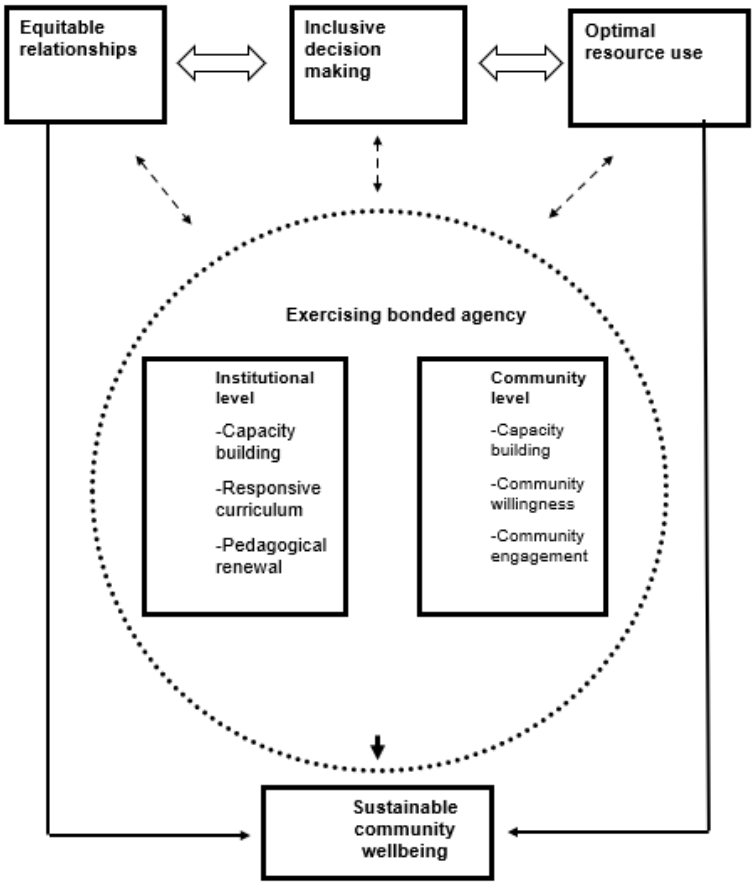

Figure 8-1 Human development-centred partnerships for climate change adaptation

The diagram presented above illustrates the complex multi-layers of the human development-centred framework, showing the interconnectedness and interplay of the various conceptual components discussed in section 8.2 above. The Human development centred partnerships framework for climate change adaptation consists of several interconnected components. At its core are equitable relationships, inclusive decision-making, and optimal resource use, which are depicted by double arrows, indicating their interdependence. These components highlight the importance of fostering fair and balanced relationships among stakeholders, ensuring that decision-making processes are inclusive and participatory, and optimising the use of resources to achieve sustainable outcomes.

Within this framework, a significant role is assigned to bounded agency, represented by a circle positioning the role of institutional and community level factors. Bounded agency is explored in terms of how it influences participants' ability to participate in the adaptation interventions. The framework further recognises the importance of building strong social bonds, trust, and cooperation among stakeholders, which in turn enhances the effectiveness of decision-making processes and resource allocation. The presence of bounded agency acts as a catalyst for the interaction and synergy among the three main components, reinforcing their impact on sustainable community well-being.

The double arrows in the diagram show the relationships between the three conceptual components. As indicated above, these components are interconnected as displayed by the double arrows. The double line arrows demonstrate that bounded agency is highly connected to all components and its interplay can affect the outcome of the partnership goals. The interaction between the three components and the role played by bounded agency can lead to sustainable community well-being as represented by the three-line arrows.

8.5 Conclusion

This chapter consolidated the findings from across the three empirical chapters (5, 6 and 7) to theorise how universities, through university-community partnerships contribute to community well-being. This theorisation is rooted in the empirical data but conceptualised in terms of the human development paradigm presented in Chapter 3. A common thread in all the empirical chapters was that while partnerships contribute to sustainable community well-being in a number of ways, community adaptation interests are not the centre of the partnership as the benefits of the partnership seem more inclined towards the university interests. This ultimately affects the manner in which communities participate and undertake decisions regarding advancing their climate adaptation interests. Therefore, the main argument in this chapter was the development of a human development-centred framework that positions the community adaptation interest at the centre of the adaptation partnership. Underpinned within the core pillars of the human development approach as advanced by Alkire and Deneulin (2010) and Boni and Gasper (2012), the chapter conceptualised a human development-centred partnership that

fosters community well-being by foregrounding community adaptation interests. By outlining the four components discussed in the chapter, the chapter presents a framework of how the partnership would look if modelled around the pillars of the human development paradigm. The components are: (1) equitable relationships, (2) inclusive decision making (3) optimal resource use and (4) sustainable community well-being. In doing so, the chapter responds to research question four:

> How can the human development paradigm foster the design of a human-development centered university community partnership framework for climate adaptation in Malawi?

To foster a human development-centred partnership, the study argues for the need to equitable relationships, inclusive decision making and optimal resource use as the interaction of these components can lead to sustainable community well-being, as they reinforce each other's impact. The study further makes a case for acknowledging the role of bounded agency across the three components, as the interplay of individual motivations for undertaking partnership interventions can be affected by structural and institutional challenges. Therefore, I argue that if partnerships do not foreground community interests more sincerely, they will remain spaces for universities to further their teaching and research functions at the expense of addressing the adaptation challenges faced by communities. Adaptation partnerships should provide space for community critical engagement, unlock community potential and spur creativity. The next chapter offers insights into the summary, limitations, and conclusion of the study.

Chapter 9 : Summary, Reflections, and Conclusion

9.1 Introduction

The main objective of this concluding chapter is to integrate the arguments presented in the thesis, provide comprehensive answers to the research questions, summarise the primary contribution of the research project, and offer recommendations. I begin the chapter with reflections on addressing the research questions section. I then discuss the contribution of the study, its limitations and areas of future research as well as recommendations. Finally, I provide reflections on the research process, followed by concluding thoughts.

9.2 Reflections on addressing the research questions

9.2.1 Research question 1: 1. What are the motivations for and successes of existing climate adaptation partnerships in Malawi??

Chapter Five aimed to address the first research question, which sought to investigate the motivations for universities and communities to engage in adaptation partnerships. The chapter also explored the potential successes of the existing partnerships to respond to climate change in Malawi. Understanding the motivations for university-community partnerships is crucial as it enables universities to engage with communities meaningfully and to align their efforts with community priorities and aspirations. Additionally, comprehending the successes of existing partnerships is equally important as it allows stakeholders to effectively leverage resources, promote collaboration, and develop context-specific solutions to address climate change challenges in Malawi.

Overall, the study reveals that universities and communities have contrasting but complementary motivations for engaging in adaptation partnerships. The chapter summarises the motivations in four ways. Firstly, partnerships are seen as a way of contributing to the universities' civic responsibility of addressing emerging societal challenges like climate change. Although this motivation was widely expressed by the university lecturers, the study findings showed that some of the lecturers viewed this function as an additional university mission, with teaching and research being the primary functions. Consequently, it is unsurprising that some community members lacked awareness of the university's mandate to support their climate adaptation initiatives. This

implies that the contrasting motivations for adaptation partnerships suggests a deficiency in the institutionalisation of partnerships at the grassroots level, hindering communities' critical engagement with the university.

Secondly, the chapter highlights that partnerships focused on climate adaptation as an opportunity to enhance students' preparation for community adaptation work. The study reveals that community partnerships offer a means to enrich students' practical experience, which in turn enhances their ability to apply theory to practice. Additionally, community experience can provide students with outdoor learning skills that prepare them to work more effectively with communities. The chapter also discusses a unique finding related to students' experiences working with communities, which is the creation of bonds with communities and the acquisition of transversal skills such as critical analysis, problem-solving, and leadership. However, students expressed a need for extending the period of fieldwork experience to allow them internalise the demands of working with communities.

The findings indicated that academic staff are motivated to partner with communities in order to generate new knowledge and contribute to literature in Malawi on climate change adaptation. The research suggests that partnerships provide opportunities for universities to produce evidence-based publications that are published in academic journals. For instance, lecturers' views demonstrated that collaborating with communities allows them to collect local data and publish works that contribute to knowledge production and enhances their scholarly reputation.

The study also showed that financial rewards play a significant role in motivating university staff to engage in climate adaptation partnerships. The opportunity to earn extra income through individual monetary incentives offered by the university incentivises staff to allocate time for partnership interventions, particularly in the context of low salaries and insufficient government support for engagement activities. However, the use of financial incentives may pose sustainability and ownership challenges beyond the project phase. In addition, LUANAR's overreliance on donor funds to run partnership programmes raises concerns about sustainability and autonomy, particularly as external funders' interests

change. The study highlights the need for a sustainable approach to climate adaptation programs that prioritises people-centred ideologies and institutional autonomy.

Regarding what the existing partnerships can enable, the study findings revealed three main potential opportunities: social cultural acceptance, policy and planning support and pooling valuable resources. The findings demonstrated that university-community partnerships create opportunities for university staff and students to be accepted and integrated into community dynamics, which allows them to capitalise on and expand their skills in advancing several adaptation strategies. Based on the results, the partnerships also strengthen relationships with community stakeholders, providing a platform for them to create adaptation strategies and support the identification of local barriers to climate adaptation. Furthermore, the partnership can create space for meaningful conversations between the public and duty-bearers on climate adaptation actions, contributes toward the policy formulation process, and lobbies for support from the government and other stakeholders for climate action. From a policy perspective, the findings demonstrated that universities have the potential to seek community views that inform the formulation of climate adaptation policies and strategies that combine scientific research with indigenous knowledge.

Second, in terms of pooling valuable resources, the findings demonstrated that partnerships between universities and local communities can be a valuable resource for upscaling climate adaptation initiatives. This was evidenced by indicating that universities possess technological, practical, and social resources that can facilitate innovation, advance entrepreneurial opportunities, and scale up research on new crop varieties. For example, participants shared that partnerships can lead to the development of low-cost irrigation models, early warning systems, and climate-responsive agricultural practices that are tailored to the needs of local communities. The findings also indicated that partnerships can also support sustainable income-generating activities, such as mushroom production, beekeeping, and waste recycling into briquettes, to reduce poverty and promote environmental sustainability. In addition, partnerships can contribute to scaling up research on high-performing, climate-resilient, and diverse nutritious crops

such as cassava, local fruits, sorghum, and millet that would make agriculture more dependable.

Third, the findings demonstrated that partnerships are crucial in shaping funding choices for climate adaptation initiatives. The results revealed that donors want to see local communities involved in adaptation projects from the design stage. This means that engaging communities in the decision-making processes cement the argument that community participants are treated as both the means and end of the development process. Based on the results, coordination among various departments within universities can enable successful negotiations for multi-sectoral projects that leverage the diverse expertise available in those departments. This means that the lack of coordination in universities' approach towards climate adaptation partnerships leads to a reduction in resource efficiency for adaptation efforts. Therefore, universities can showcase value for money by persuading donors to fund partnership adaptation programmes as a single entity rather than each faculty submitting separate applications

Additionally, the findings revealed that social capital and networks can play a significant role in shaping climate adaptation partnerships between LUANAR and communities. This means that trust, existing relationships, and shared norms and values between the university and communities are essential in providing potential opportunities for accessing resources and advancing climate adaptation interventions. The findings further demonstrated that lack of optimisation of available resources in the community for responding to climate threats and the lack of empowerment and sustainability aspects of managing new projects are challenges that need to be addressed. Therefore, the partnership must focus on empowering communities, taking a multidimensional approach to climate adaptation initiatives, and carefully testing and implementing new technologies sustainably.

9.2.2 Research question 2: What key issues should be prioritised in these university-community partnerships for climate change adaptation in Malawi?

Chapter 6 of this study responded to the second research question on specific issues to be prioritised in the adaptation partnerships. Understanding specific issues to be prioritised was crucial to ensure that the efforts of universities and communities are

aligned with community priorities and aspirations and that their resources are effectively leveraged.

Overall, the findings indicated that the partnership should prioritise the following three critical issues. First, the study highlighted the need to establish and sustain relationships as a crucial priority in these partnerships. The findings demonstrated that relationships serve as the foundation for collaboration and are essential for addressing the complex challenges associated with climate change. Participants in the study emphasised the importance of knowing and understanding each other to enhance reciprocal learning, joint agenda-setting, and sustaining the partnership. The findings illustrate that effective relationships foster clarity in managing expectations and enhance mutual respect and trust. Consequently, clear expectations facilitate dialogue and enable the university and communities to communicate their needs and limitations in line with available resources and expertise. The study findings align with most literature on the value of relationships in climate change adaptation, which include promoting equity, participation, and empowerment principles. Therefore, it is argued based on the findings that universities and communities identify, initiate, develop, and maintain working relationships that aim at working jointly towards addressing climate adaptation issues in the community

Second, the chapter indicated the need to prioritise improving organisational processes and competencies within the partnership. The main arguments revolve around three critical sub-themes: formalising partnership structures at all levels, conducting ongoing capacity analysis, and ensuring effective communication. The study indicated that formalising structures through memoranda of understanding (MOUs), was seen as the cornerstone of partnership governance. The findings demonstrated that these formal agreements help clarify roles, expectations, and responsibilities of both university and community stakeholders. The results further showed that ongoing capacity analysis, conducted regular assessments and reviews of partnership structures and systems, both at the university and community levels, are essential for evaluating progress and identifying opportunities for improvement. For example, participants shared that capacity analyses can help ensure that resources, skills, and competencies are aligned with the partnership's goals and objectives. The study further identified asset mapping as a

transformative tool in fostering collaboration, empowerment, and effective climate adaptation efforts within university-community partnerships. From the findings, asset mapping shifts the focus from needs-based to strength-based perspectives, empowering communities to take an active role in adaptation initiatives. Additionally, effective communication was also essential in aligning the university's resources and expertise with the community's needs and expectations. Clear communication and understanding each other's strengths and weaknesses was seen as a way of filling the gap between what communities expect and what universities can provide. As the study argued, this alignment would, therefore, promote efficiency and ensure that resources are directed where they are most helpful.

The third category of priorities was community engagement and education, which involved active participation and empowerment of communities in the adaptation process. The study findings reinforced the need for universities to include communities in co-designing adaptation solutions and resolving conflicts through mediation, negotiation, and compromise. It argues that involving communities is essential for empowering and ensuring they have ownership of adaptation initiatives. However, the study noted that current partnerships often lack genuine community involvement, with universities sometimes dominating decision-making. To address this gap, the study recommends conducting needs assessments, stakeholder engagement, and participatory planning to ensure the partnership is inclusive, equitable, and less extractive. In regard to climate education, the findings argued for the necessity for building climate change awareness and education, not only within universities but also among communities, to foster a shared understanding and inspire innovative solutions. Additionally, the findings argued for the partnership to foreground community-based adaptation strategies, emphasising the importance of locally tailored approaches that draw upon traditional knowledge and community-led interventions as the starting point of adaptation planning.

9.2.3 Research question 3: How do university-community partnerships for climate change in Malawi contribute to human development for people in vulnerable rural communities?

The third research question examined the contribution of the adaptation partnership in enhancing community well-being. Participants were asked to reflect on how the current partnership interventions have a positive impact on community well-being.

Overall, the findings reveal that the partnerships between universities and communities have fostered social cohesion by bringing people from diverse backgrounds together. Activities like university-organised field days and community workshops have promoted shared experiences, understanding, and collaboration among participants. Study findings also showed that university-community partnerships play a crucial role in strengthening the adaptive capacity of rural communities by providing climate knowledge and multiple adaptation options for communities to respond effectively to climate uncertainties. The multiple adaptation options offer communities the choice to choose and prioritise the adaptation strategies they value. However, the findings raised concerns that community consultations were often limited due to time constraints, leading to reliance on government officers and local government structures for input. This approach may not fully represent the diverse needs and perspectives of the entire community. Therefore, the study argued for finding a balance between using views from local government structures and actively engaging with community members, including youth groups, community groups, and the elderly. The thesis argued for emphasising the importance of meaningful community participation in decision-making processes to ensure inclusive and transformative human development.

The study findings also highlighted the significance of university-community partnerships in providing agricultural extension services to rural communities. In areas where government extension workers are scarce; communities heavily rely on university students and staff to access information about farming and climate change. This underscores the role of universities in bridging the gap in agricultural extension services, particularly in underserved areas. However, the study argues for a call for curriculum adjustments to prepare students better for community partnership work. This is because students often struggle to apply theoretical knowledge to practical situations, and the

curriculum should incorporate more community perspectives. Additionally, transversal skills such as critical thinking, facilitation, and community engagement should be emphasised in curriculum development.

Finally, the partnership has contributed to enhancing coordination and collaboration within at the community level. The findings demonstrate that the partnership has strengthened the coordination of local government-established structures like village development and area development committees, which coordinate partnership activities. However, the study findings also acknowledged that coordination and collaboration can be challenging if power issues remain unaddressed. Hence, the study argues for more effective coordination and collaboration to enhance the impact of climate adaptation efforts.

9.2.4 Research question 4: How can the human development paradigm inform the design of sustainable university-community partnership models for climate change adaptation in Malawi?

This research question intended to theorise and or conceptualise how university community partnerships would look like when modelled on the human development approach. This research question was addressed in Chapter 8, the theorisation chapter. While the findings of this study highlight the significant potential to address community challenges, scholars have emphasised that most university-community partnerships have better suited universities' interests like research goals and teaching functions rather than the community needs (see Plummer et al.,2021 Rhoades et al., 2015); community needs are often left out in the adaptation partnerships. However, a genuine partnership ought to advance equity in the partnership functionality. Therefore, by understanding how a university-community partnership modelled on human development, which advances people-centredness, would look like, this study contributes towards a broader university community engagement discourse and how the university and communities should work together to address climate adaptation challenges.

The study's results revealed gaps in how the existing partnerships are consistent with human development principles. For example, the lack of formal structures at the local level created inequitable outcomes as communities could not engage with university stakeholders meaningfully. Additionally, community involvement was lacking in the design of adaptation programmes and curricula. In terms of efficiency, there were gaps in

leveraging the available expertise from both the university and community perspectives, ultimately having an impact on the sustainability of the interventions. As such, the study makes a case for the human development-centred framework that foregrounds community adaptation interest as key to achieving sustainable well-being by proposing a framework with four components. These are equitable relationships, inclusive decision-making, optimal resources and sustainable community well-being. The findings further make a case for the role of bonded agency in navigating individual structural and institutional challenges that may impede individuals' motivation and ability to participate in adaptation interventions. The human development-centred partnership would therefore entail:

i. Equitable relationships: relates to the partnership advancing the principle of fairness and actively involve local communities in partnership structures, decision-making processes, and agreements to ensure transparency, inclusivity, and mutual benefit. This approach empowers communities and enhances the effectiveness and sustainability of climate adaptation efforts.
ii. Inclusive decision-making: entails involving diverse stakeholders, including community members and representatives, in the decision-making process on adaptation partnerships. It ensures that all voices and perspectives are heard and considered when making decisions related to climate adaptation interventions.
iii. Optimal resource utilisation: refers to the efficient and effective allocation of various resources, encompassing financial, human, and material assets, to achieve the partnership's objectives. This entails a thoughtful allocation of resources such as research capabilities, financial investments, and technological assets to tailor climate adaptation strategies to the specific requirements of the local community. The process is informed by comprehensive assessments of the community's vulnerabilities and is centred on bolstering the community's resilience in a manner that is both sustainable and efficacious. It actively encourages community engagement, capacity-building initiatives, and the integration of academic knowledge to develop solutions grounded in empirical evidence. Moreover, optimal resource utilisation underscores the importance of continuous monitoring and adaptability to address the evolving challenges posed by changing climatic

conditions, thereby ensuring that the partnership contributes to enduring climate resilience and the community's overall well-being.

iv. Sustainable community well-being: refers to a holistic and inclusive perspective on developing communities that prioritises the long-term welfare and quality of life for all its members while also considering these improvements' environmental and social sustainability. It further acknowledges that development should not come at the expense of future generations or the well-being of vulnerable community groups.

v. Bonded agency entails the relationship between an individual's motivation and the social and institutional barriers surrounding their partnership, which might affect individuals' motivation to participate in adaptation interventions. It recognises limitations and boundaries to each partner's influence and decision-making authority.

9.3 Contribution of the Study

9.3.1 Theoretical contribution

This thesis offers a novel perspective on university-community partnerships for climate adaptation in Malawi by introducing a human development approach as a conceptual framework for exploring the partnership. The study is one of the first in the context of Malawi, particularly for its uniqueness in using the human development approach as its theoretical framework. It reframes the discourse on climate adaptation by emphasising the importance of community well-being and the role of universities in fostering an enabling environment for communities to advance their adaptation interests. The thesis fills a significant gap in the literature by providing a people-centred dimension to university-community partnerships for climate adaptation, which was previously lacking. It highlights the importance of universities not only as sources of knowledge but also as catalysts for community-driven initiatives, providing opportunities, resources, and support to take ownership of their adaptation processes. The human development approach reveals the notion of bounded agency, which may manifest in situations where community stakeholders are constrained by limited access to technical expertise or other resources necessary for effective climate change adaptation. This approach encourages a more holistic understanding of climate adaptation that accounts for social, economic, and

environmental dimensions. It also promotes the idea that communities should actively shape their futures. The thesis also identifies essential conditions for successful university-community partnerships, including equal relationships, inclusive decision-making, optimal resource use, sustainable well-being, and the role of bounded agency in ensuring that partnerships are genuinely transformative and beneficial to the university and the community. Overall, this thesis makes a valuable contribution to the existing scholarly knowledge on an exploration of climate change adaptation and HD in Malawi.

9.3.2 Contribution to literature on universities in Malawi

This study makes a unique contribution to the literature on university-community partnerships for climate change adaptation in Malawi by expanding our understanding of the potential of such partnerships to drive local climate adaptation initiatives based on community interests. Unlike previous studies that have focused on broad rural development challenges and innovation or university-private stakeholder partnerships, this study highlights the potential of partnerships to drive local climate adaptation initiatives based on community interests. The study builds on McCowan's (2020) argument that universities have a significant impact on society and the environment and emphasises the importance of a comprehensive understanding of this impact. By using a human development approach, this study promotes Southern theory and increases the applicability of its findings to other developing countries in sub-Saharan Africa facing similar climate change challenges. Overall, this study broadens our understanding of the potential of university-community partnerships to address local climate adaptation issues and contribute to the Global South knowledge bank.

9.3.3 Information for policy building and practice

This study provides valuable information for policy building and practice. By applying the human development approach, the study examines the different roles played by stakeholders in the adaptation partnership, emphasising the mutual contributions of universities and communities. It conceptualises a human development-centred partnership in both theory and practice, which can influence policy and practice by government, universities, and communities themselves. The study identifies gaps in policy at the government and university levels, institutionalisation gaps at the community level, and gaps in inclusive participation and resource optimisation. However, it also highlights the ways in which the partnership contributes to community well-being. Despite

the complexities and divergences in the contributions made to communities, the study demonstrates the significant impact of university-community partnerships on climate change adaptation. Therefore, these findings can be utilised by the government, universities, and communities to achieve broader adaptation outcomes.

9.4 Study limitations and areas for future research

The study has a significant limitation in that it does not adequately address the gender aspect of adaptation partnerships. It is crucial to recognise the gender dimensions in a study that involves the community members in undertaking adaptation partnerships. Gender plays a critical role in the success of adaptation partnerships, and it is essential to understand and address it to ensure equitable outcomes for all involved. Therefore, further research is needed to explore the gender dimensions of adaptation partnerships and their impact on communities.

Second, although the human development approach provides a novel perspective on examining university-community partnerships for climate change adaptation, it is important to recognise that this qualitative study only offers an in-depth analysis of one university in Malawi. Therefore, caution should be exercised when drawing general conclusions about university partnerships in Malawi based solely on this study. While the interviews conducted with policymakers, experts, and communities provided valuable insights into the challenges and opportunities of such partnerships, it is crucial to acknowledge that the findings may not be directly applicable to an urban university with different climate change complexities. However, this limitation can also be viewed as a strength since it allowed the study to concentrate on a university situated in an area encompassing some of the most impoverished communities, who are particularly susceptible to the impacts of climate change. Future research could build on this study by examining other universities and communities in Malawi and other sub-Saharan African countries facing similar climate change challenges. A comparative analysis of university-community partnerships in different contexts could provide a more comprehensive understanding of the factors that contribute to successful partnerships and inform policy and practice. Additionally, future research could explore the potential of

technology and innovation to enhance university-community partnerships for climate adaptation and promote community-driven initiatives.

Another limitation of this study is that while the results highlighted challenges related to funding from external donors and limited time for universities to conduct inclusive consultations with communities to meet submission deadlines for grants, the donors were not included in the study design. This was due to the fact that most of them do not have physical offices in the country, making it difficult to gather their perspectives. Consequently, the study did not provide insights into the perspectives of potential donors and employers.

One key argument of this study was focused on exploring whether the partnership creates opportunities for local community involvement in adaptation initiatives. However, the study did not delve into assessing the impact of the university community partnership for climate change adaptation. Therefore, for future research, a longitudinal study to assess the long-term impact of university-community partnerships on climate change adaptation in Malawian communities is crucial in establishing the efficiency of these partnerships on community well-being. This could involve employing a mixed-method research design to track changes in community resilience, well-being, and sustainable practices over several years to understand the lasting effects of these partnerships.

9.5 Recommendations

The recommendations section of this study provides practical suggestions for improving university-community partnerships for climate change adaptation in Malawi. The recommendations are aimed at various stakeholders, including universities, communities, and the government. The recommendations cover a range of areas, such as governance structures, curricula revision, external funding opportunities, monitoring and evaluation, and inclusive environments, as discussed below.

9.5.1 Recommendations for universities

Based on the study findings, universities should:

- Support communities to establish clear governance structures for university-community partnerships, outlining roles, responsibilities, and decision-making

processes through memoranda of understanding (MOUs) and designated personnel.

- Begin to view adaptation partnerships as more than just a support function and give them the same prominence as teaching and research. This perspective should be reinforced and integrated into institutional policies and strategies. A deliberate effort should be made to develop a standalone policy guiding adaptation partnerships, given the centrality of the climate partnerships discourse within the university.
- Revise curricula and pedagogical approaches to prepare students for community adaptation partnership work better. This should include incorporating more practical, community-oriented components into coursework. Emphasis should be placed on transversal skills such as critical thinking, facilitation, and community engagement to ensure students can effectively apply theoretical knowledge to real-world situations.
- Establish a system for monitoring and evaluating the impact of university-community partnerships on climate adaptation and community well-being. The framework produced in this study could be used to design such an M & E process. Regular assessments can help identify areas of improvement and guide future policy decisions.
- Explore opportunities for diversifying funding to support climate adaptation projects. Collaborate with international organisations, NGOs, and government agencies to secure additional resources for large-scale initiatives.
- Navigate the complex fabric of power relations and institutional challenges that deter coordination and collaboration and ensure homogeneity regarding how adaptation partnerships are taught, by whom and how.
- Actively seek opportunities to enrich students' education through practical experiences gained from climate adaptation partnerships. This can prepare students to be better equipped for real-world work in communities and enhance the application of theoretical knowledge.
- Prioritise inclusive environments where knowledge sharing is not limited to community leaders but extends to all community members. This approach ensures

that everyone can access relevant information for making informed choices about engagement in adaptation interventions.

9.5.2 Recommendations for communities

- Prioritise inclusive environments where knowledge sharing is not limited to community leaders but extends to all community members. Ensure that everyone can access relevant information for making informed choices about engagement in adaptation interventions.
- Establish platforms for effective science communication between universities and communities to transfer context-based extension services on climate adaptation. These platforms can serve as spaces for dialogue, learning, and idea sharing, ultimately promoting collaboration, community empowerment, and the advancement of adaptation partnership work.
- Establish a system for monitoring and evaluating the impact of university-community partnerships on climate adaptation and community well-being. Regular assessments can help identify areas of improvement and guide future policy decisions.
- Encourage the local development structures to link adaptation partnership interventions to local and national strategic priorities.

9.5.3 Recommendations for government

- Policies should support capacity-building initiatives that enable universities and communities to develop the skills and competencies necessary for effective collaboration and adaptation planning.
- Ensure sufficient resources are allocated to support university-community partnerships for adaptation to climate change. This includes funding for climate adaptation partnerships. Governments and international organisations should consider providing financial support for these initiatives in a manner that allows flexibility in implementation.

9.6 Conclusions

This study explored university-community partnerships for climate change adaptation in Malawi from a human development perspective. Literature indicates that these partnerships have the potential to support and address transnational societal challenges like climate change by co-creating knowledge, promoting mutuality, and advancing local

expertise. By partnering with local communities, universities can enhance context-specific learning and knowledge, crucial for informing effective adaptation strategies. However, there is a lack of information on how these partnerships are implemented in Malawi and whether they create an enabling environment for communities to advance their adaptation interests. This study examined the current state of university-community partnerships for climate adaptation using the case of LUANAR and surrounding communities.

The study argues that universities are well-positioned to provide technical expertise, outreach, and resources for local adaptation initiatives. However, their contribution to community well-being may require a shift towards a human development-centred perspective, which includes foregrounding the adaptation needs of communities. This shift would move away from universities viewing themselves solely as service providers to communities and instead prioritise the development of long-term, equitable partnerships that promote community agency and participation. In essence, those partnerships should prioritise equitable relationships, inclusive decision-making, and optimal resource utilisation for sustainable community well-being. The study also emphasises the role of bounded agency in helping communities navigate institutional and structural challenges encountered in partnership interventions.

Based on the findings, the current approach to adaptation partnerships prioritises university interests, limiting communities' agency in advancing their adaptation goals. Therefore, this study proposes a human development-centred framework for university-community partnerships that would prioritise people-centeredness. Universities can effectively address gaps and design people-centred and context-specific adaptation strategies by adopting bottom-up approaches and collaborating with community stakeholders.

For universities to strengthen adaptation partnerships with their communities, they must prioritise community integration into their activities. This can be achieved by collaborating with community-based organisations to co-design and implement adaptation initiatives that are tailored to the specific needs of the community. Additionally, universities can involve local stakeholders in research and educational activities, ensuring that their work

is grounded in the knowledge and experiences of those most affected by climate change. By doing so, universities can promote community empowerment and capacity building, while also ensuring that their efforts are responsive to the needs of those they seek to serve. The study argues that such initiatives would provide opportunities for communities to advance their adaptation interests, promoting well-being and sustainability.

This thesis explored how universities, through university-community partnerships, contribute to improving vulnerable communities' adaptation to climate change in Malawi. The study is one of the first in the context of Malawi, particularly for its uniqueness in using the human development approach as its theoretical framework. The argument put forth in this thesis is that university-community partnerships have the potential to positively influence how global development challenges such as climate change are defined, understood, and addressed in contextually sensitive ways. The study offers contrasting and critical views on university-community partnerships' contribution to community well-being. It provides evidence that while adaptation partnerships enhance community well-being by providing multiple adaptation options, income, and skills, they do not entirely offer space for inclusive decision-making for communities in the adaptation process. That is, the partnerships are merely superficial and only succeed in advancing university interests.

Despite the limitations mentioned above, this study provides compelling evidence that universities, through university-community partnerships, play a crucial role in enhancing vulnerable communities' adaptation to climate change. The study concludes that to achieve sustainable community well-being, university-community partnerships must prioritise equitable relationships between university stakeholders and communities, inclusive decision-making in the adaptation process, and optimal use of available resources. By doing so, communities can exercise their bounded agency and contribute meaningfully to advancing their desired adaptation interests. Based on the findings, the study offers recommendations to universities, communities, and the government. Overall, the results of this study contribute to the existing knowledge on universities and climate change response in the context of Malawi and southern Africa, where the impacts of climate change continue to disrupt community well-being.

9.7 Thoughts on the research process

I began my PhD journey in 2021, during the peak of the Covid-19 pandemic in South Africa. Due to the circumstances, I was mostly confined to my room, and supervision meetings and mentorship were conducted online. Despite the difficulties of being confined to my room and having limited in-person interactions, the online format of supervision meetings and mentorship allowed me to connect with my supervisors and colleagues from all over the world. This experience has taught me the value of adaptability and resilience in research.

Settling in a foreign country under such conditions was challenging. As someone with a natural science background, I found it difficult to get into the rhythm of qualitative in-depth research. However, my supervisors were incredibly supportive and challenged me in ways that helped me progress. Without their guidance, I might not be where I am today. I have come to appreciate the importance of understanding people's experiences and perspectives. This approach has allowed me to gain a deeper understanding of the issues I am studying and has helped me develop more nuanced insights.

Through this experience, I discovered my passion for research and grew to love qualitative research. During fieldwork, I particularly enjoyed engaging with people, listening to their stories, and making meaning out of them. As a former student of the university where I conducted my research, it was enriching to renegotiate my positionality and attachment to the institution.

As an experienced climate resilience expert having worked for NGOs, I was able to draw from my experience in engaging with rural communities. This helped me to interact with participants during the research process. Finally, the use of the human development approach was an exciting experience. It aligned well with participatory approaches such as strength-based methods that we used in implementing development projects. By employing this approach, I was able to gain a deeper understanding of the participants' experiences and perspectives, which helped me to develop more meaningful research outcomes. This process has been an eye-opener for me.

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9.9 Appendices

Appendix A: Ethics clearance issued by the University of the Free State

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

UFS UV

GENERAL/HUMAN RESEARCH ETHICS COMMITTEE (GHREC)

23-Mar-2022

Dear Mr Chimwemwe Phiri

Application Approved

Research Project Title:
University community partnerships for climate change adaptation in Malawi: A human development perspective

Ethical Clearance number:
UFS-HSD2021/1720/22

We are pleased to inform you that your application for ethical clearance has been approved. Your ethical clearance is valid for twelve (12) months from the date of issue. We request that any changes that may take place during the course of your study/research project be submitted to the ethics office to ensure ethical transparency. furthermore, you are requested to submit the final report of your study/research project to the ethics office. Should you require more time to complete this research, please apply for an extension. Thank you for submitting your proposal for ethical clearance; we wish you the best of luck and success with your research.

Yours sincerely

Dr Adri Du Plessis
Chairperson: General/Human Research Ethics Committee

Dr Adri du Plessis
Digitally signed by Dr Adri du Plessis
Date: 2022.03.23 15:34:50 +02'00'

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Appendix B: Sample of participant informed consent

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA
UFS UV

Yours sincerely,

Chimwemwe Phiri

Signed Consent Form

I will request you to please fill in this page and return to me. You may keep the letter above for future reference.

Title of the Study: *University-community partnerships for climate change adaptation in Malawi: A human development perspective*

Researcher: Chimwemwe Phiri

- I hereby give free and informed consent to participate in the above mentioned research study.
- I understand what the study is about, why I am participating and what the risks and benefits are.
- I give the researcher permission to make use of the data gathered from my participation, subject to the stipulations he has indicated in the above letter.

Signature : 

Date : 29th March 2022

Appendix C Interview guide for LUANAR participants

Demographic and Work History

Gender Male / Female

Date |__|__/__|__/__|__|

Name of Institution_____

Position Title

_____

How long have you been in the position?

_____

What is your education background?

_____

What is your role in this institution _____

Great, thank you. Now I am going to ask you some questions about your perceptions of UCP for climate change adaptation.

Community Partnership – Origins, Motivation and Activities

1. Who and what motivated LUANAR to open doors to the community and how long has LUANAR institutionalised university community partnerships for climate change? What community outreach activities is LUANAR implementing in regards to climate change adaptation? Who is responsible for performing the activities from both LUANAR and community sides?
2. What core features define an effectiveness of the relationship between university and community?
3. To what extent are community outreach activities perceived as successful and what benefits do the respective actors derive from them?

Characteristics and Experiences Formed

4. What does it take to make partnerships work well for all parties involved? Probe for mediating factors that influence community partners' on-going participation and collaboration?
5. How does the academic programme for students incorporate issues of partnerships with communities?
6. How does LUANAR envision university community partnerships for climate change adaptation / how would you say this university envisions its community partnership for climate change?
7. How can LUANAR design a university community partnership for climate change adaptation that puts the needs of community at the centre of the partnership?

Challenges and Way Forward for Policy Direction

8. What challenges does LUANAR face in their efforts to institutionalise community outreach and partnerships for climate change adaptation? What strategies are in place to address those challenges?
9. What lessons has LUANAR learned about how universities can become more effective in working with and strengthening their communities? How can communities best be supported in that endeavour?
10. How can public universities in Malawi better design curriculum for university community partnerships that incorporate key tenets of human development?

Is there anything that we haven't discussed that you think is very important and critical for my project?

Appendix D: Interview guide for Policymakers

Demographic and Work History

Gender: Male / Female

Date |__|__/__|__/__|__|

Name of Institution_____

Position Title

_____

How long have you been in the position?

_____

What is your education background?

_____

What is your role in this institution_____

Great, thank you. Now I am going to ask you some questions about your perceptions of University community partnerships for climate change adaptation in Malawi.

Understanding and Dimensions of University community partnerships for climate change adaptation in Malawi

1. What do you know about climate change? What does the term refer to? Do you see it as a pressing issue?
2. What are the main climate change issues in Malawi?
3. How do you think people in rural areas are adapting to climate change in Malawi? What impact do you think poverty has on this?
4. What are the existing and potential opportunities for university-community partnerships to respond to climate change in Malawi?

Universities and Climate Change Adaptation

5. What role do public universities in Malawi play in climate change adaptation?
6. How about; How do public universities in Malawi participate in climate change adaptation?
7. What are the broad climate change adaptation issues that are taken into consideration when approving public universities' programs? Which climate change issues are being prioritised/ not? Are the prioritised climate change issues considered into universities' programs? If yes, which ones?
8. What do you consider in formulating different policies in climate change adaptation in Malawi? (What's urgent/not to them and why).

9. What do you think are the enablers/ constrains towards climate adaption in Malawi and what's your take as policy makers?

Nature of University Community Partnerships for climate change adaptation

10. What kind of partnerships do you expect public universities to form with communities given the country's vulnerability to climate change? What are the expected features that define an ideal University community partnership?

University community partnership design for climate change adaptation

11. What can universities do to improve their partnership framework with communities to address climate adaptation issues?

University community partnership's Relevance, Responsiveness and Sensitivity to Climate adaptation

12. What do you think needs to change so that partnerships between universities and communities result in successful strategies for climate change adaptation?
13. How can universities design sustainable people centred UCP that addresses climate adaptation issues?

Is there anything that we haven't discussed that you think is very important and critical for my project?

Thank you for participating in the study

Appendix E: Interview guide for students

Demographic Data

Date of Interview |__|__/__|__/__|__|
Gender Male _____ / Female_____
University -
_____
Faculty_____
Department_____
Program of
Study_____

Great, thank you. Now I am going to ask you some questions about your perception on university community partnerships for climate change as a strategy for building rural communities adaptation to climate change

Understanding and dimensions of climate adaptation and university community partnerships in Malawi

1. In your own words, how would you define university community partnerships?
2. What have you learnt or what do you value about their involvement in the internships? How have you been involved in university community partnerships for climate adaptation
3. What would you consider to be the key components for an ideal university community partnership?
4. Of these components, which do you think the current university community partnership has enhanced, and how?
5. What are the things that the rural people value as key climate change adaptation strategies for them?

Higher Education and university community partnerships

6. What have you learnt in university education regarding university community partnerships that will be useful in your rural community climate adaptation work? What else would you have liked to learn from the university education regarding university community partnerships?
7. Reflecting on your university community partnerships partnership experience, what would you consider to be outcomes/benefits of university community partnerships for climate adaptation?

Universities and community role in university community partnerships

8. What specific issues should universities and communities prioritize in shaping partnerships with communities in Malawi?
9. What are the existing and potential opportunities for university-community partnerships to respond to climate change in Malawi?
10. Should university community partnerships be a topical issue in public universities in Malawi? Why? Give reasons

Conclusion: What is your final reflection in relation to university community partnerships in Malawi?
Thank you for participating in the study

Appendix F: Interview guide for community members

Demographic Data

Date of Interview |__|__/__|__/__|__|

Gender Male _____ / Female_____

Name of Village -
_____

Age
Range_____

Great, thank you. Now I am going to ask you some questions about your perceptions on University community partnerships for climate change adaptation

Understanding of university community partnerships and climate change adaptation

1. In your own words how do you understand the concept of university community partnerships and climate change adaptation?
2. What is your understanding of the university- community partnership?
3. In what ways do they think these partnerships can respond to climate change adaptation?
4. What are the main climate change issues in Malawi?

Perceptions regarding university community partnerships

5. Which universities have been working in this area and how was the partnership established? (and what did these universities do?)
6. What potential or existing opportunities are there for universities and communities to work together for climate adaptation?
7. How would you rate universities contribution to climate change adaptation? What is working well? What is not working well?Why?

Relevance, challenges and nature of university community partnerships

8. Which focus areas do universities prioritize when partnering with communities in climate change adaptation? Which key features define the partnership?
9. How relevant are interventions championed by universities?
10. Explain the process of deciding on interventions? Who is involved more in the implementation process?

11. What would you consider as challenges you face in working with universities on climate adaptation programs?

Envisaged university community partnerships

12. How best can universities establish people-centred community partnerships that address climate adaptation issues?

Is there anything that we haven't discussed that you think is very important and critical for my project?

Thank you for participating in the study

Appendix G: Sample of interview transcript of support staff

Question	Response
How does your office operate or what is it for?	*Basically, this office is a coordinating office, introduced to coordinate all the research and outreach activities for the university. So, the first coordination level it's a within that make sure that all the departments, whatever research and outreach programs at departments, faculties have the need to be known and recorded by the office, to make sure that we are avoiding duplication and informing others what we are doing. Because there are times you find the faculty of development studies doing something, the same thing also done by the faculty of agriculture or also the faculty of natural resources. So, there have been that kind of duplications, so this office is largely there to coordinate that, to make sure that we know who is doing what. And apart from the internal coordination we also make efforts to coordinate with the other stakeholders; development partners, the government, the NGOs on what are they doing and how do they partner with LUANAR. So, when they came to LUANAR, they don't like approach me as an individual but they- if they see any expertise, they have to come through my office and then I recommend that ok, on this area you can work with Mr. X,Y,Z, this area you can work with this one and sure that that kind of collaboration and partnership. So, basically, that's essence of the office*
How different is your office from the programs coordinating office?	*So, basically as I said this office is the coordination and the policy office. It's not an implementing office. So, if there is like an outreach program, then its under the PCO- so, the PCO is going to implement it but reporting the PRO. There is also like CARD, Center of Agriculture Research and Development, they will implement that, but reporting to the DRO. That's the difference, my office is coordinating and policy office, while these other offices are the implementing offices but reporting to our office for coordination.*
So, going back to the aspect of partnership, what really motivated LUANAR to open your office or to open the doors to communities around ?	*OK So, basically there are a lot of a research results, technologies, innovations that LUANAR is doing . While we are producing all these things, people out there don't know most of what LUANAR is doing, even starting with our community, the surrounding communities, there things that they don't know. You find LUANAR is doing that, but just go kilometers away from that, you will find that the communities are not doing those kinds of things. So, there was that communication gap between the university and the communities- communities felt the university*

	can the approached, like its an elite institution. Ok? So, the office came to bridge that gap to make sure that the communities, stakeholders: the government structures, NGOs and they are well informed of what LUANAR is actually doing and when they want to partner with us, how do they do that? There was no clear strategy earlier than that, they could just come and pick one person work with him. So there was no proper procedures. So, the office came in to make sure that they know what we are doing and when they want to work with us, how do they do that. So, they have to pass through this office.
What policy documents guides your work?	*So aaa, we are guided by the university statues. There is a university strategic plan that guides the operations of the office. But then the office on its own now is also mandated to develop other policies and strategies how to run the office. For example, last year we just passed the research and outreach grants policy that guides how researchers well implement outreach grants for the university. The consultancy policy, we also passed it last year. Currently we are working of the university industry engagement policy. How do we engage with the industries out there? yaa so basically that's what guides the functions of the office.*
what are the community outreach programs addressing climate change that you are implementing	*There are several projects currently addressing climate change issues. First, we have the Sustainable Food Systems in Malawi (FOODMA) project, which has three thematic areas namely a) Food system governance, policies, and institutions. b) Assess agro-biodiversity, farming systems, and seed security c) Climate change and, Sustainable Agriculture Intensification (SAD). This project is coordinated and also controlled by my office. It is basically tackling food systems and adjusting to climate adaptation issues. Now we train communities on what it means to be climate resilient and also support innovations in terms of climate research and technologies for supporting adaptation efforts. The idea is to empower the communities for meaningful change and sustainability in the long term. Further to that for this year, we have announced a call for PhD and masters' students to undertake research in the three thematic areas I mentioned above.* *There is also a sister project to called Transformational Adaptation to climate resilience in Malawi (TRANSFORM) and is purely tackling some adaptation issues affecting communities. I am also aware of initiatives from the Faculties of Natural resources and agriculture which are also running a project called*

	SIMATEX, which is experimental research for climate smart agriculture where they are developing botanical fertilizer-. So basically those are just some isolated examples of outreach programs on climate smart adaptation initiatives.
So how do you come up with such projects?	*Two ways. Firstly we respond to calls from donors to make an intervention based on the area of donor interest. You know as an institution we don't have the finances to run our own projects and we heavily rely on donors funds.* *Secondly, on rare occasions the university commissions research based on the context and from the findings, we engage donor partners to fund specific interventions proposed. Of course the former in this case is what normally happens. There are few cases where the university has taken an initiative on its own.* *let me just give an example of the FOODMA project ok. Initially there was this CABMARK program, of course I was not part of that. But then as the project was finishing, the end line report that came out isolated some needs from the communities that they pointed as outstanding post project phase. So when those kinds of things came out, now the university initiated another study to isolate priority needs from those communities. Yaa so, its like the university initiate based on pervious report. So, when we went out identifying all those things, then we now started drafting the proposal that was submitted to Norway and then luckily it was funded. This is the FOODMA project we are currently implementing.*
So how does the overreliance of donor funds affect your work?	*That's a very good question because you know you can only plan when you are in control of resources. In situations where our primarily source of funding are external donor, few things are always compromised. First talk of adhering to timelines due to delays on funds disbursement. This mostly lead to delays in implementing interventions especially those that are seasonal in nature (depends on agriculture calendar). So sometimes projects gets abandoned or carried over to the next growing season which disrupts planning and outcomes. There is also lack of flexibility with donor funds, as what's agreed cant be altered quite easily. Continuity too is an issue because all these needs funding. So much as we marvel at donor funds, we need to take a critical look into how that will shape our future plans.*
Thank you. Can you shade more insights on actual roles of the community	*Communities participate in several ways. So the first thing is that there is some kind of need identification exercise- that before the project starts, the researcher goes around the target communities*

and the university in partnerships interventions?	*to identify what are the actual needs ok? So, the role of the community at that first stage is to mention their needs. After that identification, then now the next phase becomes the actual development of what should be done and who should do what. Then after that come the actual implementation. So, the university mainly comes with the technical expertise, the trainings providing to the communities but the actual doing of the things is done by the communities themselves. For example, like the botanical fertilizer initiative, university is just supporting communities with technical expertise while the actual production is done by communities. Currently university is involving the communities to participate on what attributes are they looking for in the fertilizer, so that when the botanical fertilizers are finalised-they should not just be the climate adaptable but also liked by the community, so they make sure communities are participating in contributing to attributes that would be accepted by them in the upcoming technologies.*
what do you think are the core features that that should define an effective partnership between communities and universities	*From the experience I have had working with these projects, partnering with the communities, I think number one what is very very-key is that they must be a common understanding on the needs that have to be addressed ok yaa. The communities should specifically point out-these are our needs, and then those needs should also be within the mandate of the university and also the donor because there are times the community might have a need but then its not the priority area of the university like for LUANAR for example, OK? other things the communities may say may not be of interest to the university, for instance of they ask for a hospital, LUANAR may not provide because its outside our mandate. So, we need that common understanding. Like asking questions such as are community needs also our needs? Yaaa and after identifying that, within the partnership we have those-when we are defining the roles, who does what? That thing cannot be centrally done by university to say based on our understanding of this community, communities should do ABCD the university should XYZ donor should do this not ok, then it has also to be collaborative/participatory. The communities should define ok, us we can do this, university us we can do that, the donor they can do this and then after all the three group have agreed then we put that thing on paper. Now the implementation modality how do we implement that ? That has also to come very clear on that implementation modalities. Now the same applies if one wants to terminate the partnership. It has also to be very clear and not hap hazardously, each party needs to know what issues will break the partnership and this should be clear from the beginning. After defining all these things then they should be the clear MOU that has to be signed between the university and the*

	community and also the university have to define that agreement. It have to be laid down properly and signed by the community chairs, either could be the chief or maybe an elected person that a community has trusted has to sign that. And depending also with our understanding of the languages, we also recommend that MOU as to be translated into the language that is spoken in that area. If you are in Ruphi, we put that in Tumbuka, you are in Mangochi, it has to be in Yao so that people really understand what they are signing.
Now, these points that you have just mentioned here, which one do you think LUANAR has enhanced and which one you probably there is still gaps that needs to be worked on?	*Most of these we have enhanced, probably were there still some gaps in some other areas is the part of signing the agreement, the MOU. We have done very well with like working with the donor or maybe if we are like subcontracting the work, we have done very well but in regards to communities themselves, there are some other gaps in some other programs. In other areas we have been doing that but with some other programs they don't do that. Some of the gaps include failure to address expectations with the communities, in times where budgets had to be changed during implementation. Sometimes with time constraints the consultations are not encompassing, so we only reach out to local level structures. The issue of formalizing MOUs is the other area we can work on. So these are some areas we haven't done well.*
Have you had scenarios where communities would approach you to seek solutions on climate challenges affecting their areas?	*Yes, we have had aaah such, although in some rare cases. The times we have had that is when there is another project running and then the communities see that ok this project is doing XYZ but then, in this community we would have loved if we could have this. Yaa in such situations, the community can approach us, but what if they could be something like this then we start talking from there. but just for the community just to come like to the university and say no we have this problem in our area now we would like you to see how best you can help us, that scenario we have never encountered. But while implementing an existing project, then communities could approach us with new ideas necessitating a new project or addressed through the same project.*
Having discussed that, what do you think are the potential opportunities for university community partnerships especially in regards to climate change adaptation.	*Several potential opportunities are there for partnerships. For instance, we are introducing the radio, should be applying for license very shortly. The background has almost finished, so that's also another platform of us engaging with-because communities will be allowed to speak to us, their needs things like those. Apart from that, through the department of again agricultural extension, we are also in the process of formalizing agreement with the ministry of agriculture again through the department of agricultural extension, where by we want them to be formally or officially inviting us when ever there those climate*

	change programs and we also want to be initiating programs through them that ok, what if we engage with communities in these areas, so, through that partnership and agreement with the ministry of agriculture will be able also to have those interfaces frequently engaging with the communities. *But on the part of the communities they easily respond, the moment you reach to them, they easily respond and partner you in whatever you are initiating, all they don't want is for you to there and tell them we want this, that doesn't work but the moment they feel that they are part and parcel of what you are doing, you will succeed.*
Thank you, now to what extent do you perceive outreach activities to be successful?	*ok number one is acceptance. You can easily see community has accepted this program and number two their participation, they participate in full. ok? When you see there is no like gender segregation, no disability disaggregation, there is not age disaggregation you find all the youth, the elderly are present including men, women and the chiefs, that's a clear indication that they have really accepted it and yaa they are likely to succeed and also apart from that, you see them initiating things. They don't just wait for you to come and say ok can you do this, no. you see them initiating and making proposal, what if we do this, what if we do this, showing that they have really – taking that this as our thing, its not for LUANAR, not for MUST not for any other university buts its our thing. These are just our partners. And there is also that potential sustainability. Because the biggest problems of most our programs, you find that a year after project has phased out you go there you don't find anything. Yaaa but when you see that potential that aah thing- this thing after we go these people will continue doing it. that's again another indicator of the success.*
You have referred to participation many times in your earlier response, how would you define participation?	*On participation we expect them to actually do what the project is suppose be doing. When there is a decision that has to be made, that decision has to be made by everyone, not just the leader. When you hear the people are talking after the decision has been made and they are mumbling out there then for sure there was no participation ok, either the chief or just the university just imposed on it. But then we really expect the decision making all of them be part of the- and agree that yes, this is what we want. And when it comes to doing the things, they have also to be part and parcel of doing. If it is their own plots, if it is their own homes, we need to see that happening. There are times maybe you just find good progress on the demo plot, demo plot is really looking very promising, but when you go to their own farms, there is literally nothing worth noting. And you know these guys are just*

	representing here but they are not participating this thing but you don't see it in their own home and their own farms that they are doing.
Perfect, now when it comes to academic programs for the students, how does it incorporate issues of partnership with communities?	*That's another area I think we are not also doing very well, but then there is an attachment program that is there I think in the third year. That all the students are supposed to be attached to the industries. Apart from that we also encourage like the field trips where by each and every course that has an outreach component in it we encourage that they need to visit the real communities, not just the industries, but the real communities, chart with them, talk with them learn from them and produce the reports which is graded by the concerned lecturer yaaa so those are just some of the how we incorporate into the academic programs. However, there is an ambitious proposal that is also coming from my office, of course it hasn't been discussed yet. What I'm telling you is not necessarily what LUANAR is doing, but what my office is proposing to management. Aah most of our programs are four-year programs but early we are proposing to add the fifth year program. Now that fifth year will be pure practical, where by our students will be bow doing exactly what they have been learning, now they have to do that ok? With the communities, on our Bunda commercial farm and we would be able to make use of the mega farm that the government is trying to introduce so, would be working on those, but they will be under the government internships. So, they will be paid while also under the close supervision of their supervisors. After that that's when they will be graduating. Its just the proposal to enhance to outreach programs into the academic syllabus of our graduates*
So what really has not been going on well to suggest such a change in curriculum?	*so as am saying it's that gap that is there between the university and the community needs, they seem to be that gap. When ever we produce technologies and innovations, most of them are not resonating very well with the communities, we don't reach out them most of the times and you find that, others are just die a natural death on the shelf. Our department of agricultural engineering for example, they have been producing a number of irrigation technologies of rate, they have improved on the treadle pump they produce then most of the communities don't know that LUANAR has done this. Ok? So, that is the biggest problem.*
How does LUANAR envision university - community partnership on climate change adaptation?	*If you look at our strategic plan, you will notice that outreach and research are under strategic pillar number two. That shows that we – as LUANAR really put that as a priority, that has to be done at all cost. In addition to this, I mentioned that there are- in addition to this strategic plan, other policies that we are also working on and currently we are finalizing the industry*

	engagement policy. Now the word industry there its just the sum up word, its basically the outreach engagement policy in fact. So in that policy, its where we want now to adequately outline all the strategies that university is intends to follow in the next five years and beyond. It will give us an idea on how do we engage the communities around the local communities outside LUANAR or outside Lilongwe, the actual industries aah in the city as we go towards commercialization and how do we engage those industries. But the idea is to open up to communities and let them shape the nature of the partnerships they aspire. So, the actual strategies will be well written when we finalize this policy. So we really envision a more multi sectoral approach to partnership
how do you think can LUANAR design a partnership for climate adaptation that really put communities at the Centre of partnership?	*Ok so, aah once we open up these platforms I just mentioned of engaging the communities, then it will stop being LUANAR initiated initiatives, but rather will be waiting to hear form the communities. So communities will be talking to us either through the radio or through the mobile extension programs or through the department of agricultural extension. So when they talk to us will now being bringing actual needs that is actually there. there some other communities that we have never even been there before, but through the extension services will be able now to reach out almost everywhere, or through the radios, so when ever they request for follow up, we meet them, we talk to them and see the how best can we engage you. We will be able to determine how best can they engage the university or how can we engage other development partiers to address these needs generated by the community itself. So, we are really serious on putting up these platforms and currently we are running what we call LUANAR Portal impact that was initiated when the new VC came in aaah last year. In those initiatives, my office is also planning to slot in one component we are calling it SPEAK TO THE VC. So, that we also want to open up to the communities or anyone can have something to talk with the VC. THAT platform will be identifying what the people like really to see coming out from LUANAR to engage those communities*
That's really interesting. Finally let's talk about challenge, what are the challenges that you face and probably what are the strategies are in place to address those challenges?	*First and for most is resources, because we are still a sub vented institution and then rely on government to give us something for us to go out. Yaa that's the biggest challenge that we have. To mitigate this challenge, we are encouraging all researchers that when they are doing their research, they have to allocate a significant amount or they have to budget for the office of the DRO. So, whatever we are getting the researcher, their research program, outreach program, consultancy programs, then we are now investing back into these programs to reach out communities. Secondly is also the mindset change. Stating with*

	the university itself. You find people have been they're for several years, they always come to you and say aah but some, you have just come, there is- mwabwela liti (when did you come here)? Eeh? This is not how we do things here ok? Yaaaah. So to convince such people to do think outside the box, that would be a very big challenge that slowly after we have done one thing and we have see this is really working others will be getting along. Another challenge also even for the communities themselves to really start understanding ok I think we can work with the university this way. Its also a challenge that we really need more investments, aah for them to open up and start treating us as equals. We need time, we just need to keep on pushing for the change.
So how can universities I mean how can the communities best be supported in that endeavor.	*Basically, I think the big responsibility rests with us at the university, because we benefit more than the communities themselves in many occasions. But we have been closed for quiet long time. Like the communities around Bunda for example they feel like- because most of times our student go there to do their research things like those. So they just feel like you people you just come here to get it from us but the we don't see your input to us. We don't see the benefits. Yaaa so, we really need to open up for them to say we are partners. We want to work with you are partiers not the us benefiting only or you benefiting only but as partiers you can talk to us. But another thing is we have to live by what we say. Because that has also been another challenge, we talk to them that we would like to do ABCD but then when we go, we don't go back to them. we don't do anything. yaa so we really need to do what we have said we are going to do are these-. Other things they don't need a lot of resources actually. because like using just our students to train the communities in a new technology that we have developed we will need very few resources from us, just fuel and maybe the small lunch for the students, that will make a big difference. Sometimes also we don't provide feedback to communities when maybe we have done like a research we consulted them, we don't go back to give feedback. We do have some maybe with the donor, or maybe with stakeholders in town to tell them of the study findings. but really do we go back to the communities we collected information to give them feedback on what we have find out. So that's another big reason the we may need to also improve. If I want to go there then…. At least we can invite the representative where we got the information so that they come and also make their further inputs to that.*
What do you think could be done for public universities in Malawi to	*Very key is the honest and thorough consultations, let us consult the communities. When we are defining the stakeholders is not just those the alumina or those that are in offices not, we miss out*

better design curriculum for partnership programs, that of course really addresses the needs of communities on the ground?	*there. ok? but also go to the communities and the we learn they are actually doing. And then, lets also have like some other eeh – in the curriculum, lets try to include more like professional or maybe something that like someone- a standard eight drop out for example but we see that he is innovative somewhere, lets open up as university to everyone. Like there was this other day I think we were watching this cruise 5 by Zodiac TV and then there were talking to a guy from is it Mgona or somewhere. As he is now producing maize shellers, ground nuts shellers. And the talking to the guy was like me I dropped out from school when I was in standard 6, but these are the things that even the polytechnic is not doing. Our department agricultural engineering at LUANAR is not doing but was suppose to be doing something like that. Ok? We are saying ok, let us flexible in our programs, this guy did not go to school but he is innovative, he can do this. How can we bring this guy to come to LUANAR in our department for example and then also bring his ideas but we also develop using now our class work. How can we develop this further and commercialize that? Yaa so, We want our universities to have that component, they can open up with the communities bring in the innovations that are doing something good but they did not go to school, but we know we can commercialize that thing in the universities*
No that's an interesting point, is there anything else that we haven't we discuss but probably you think may be important for my project?	*Aaah no, I think no. I have to say my office is still flexible. When ever you have another question, please just drop an email, I should be able to respond. If you don't need from my office but you know this can be addressed from LUANAR, then for sure my office is also right aaa pathway to reach out any other person you want to contact to.*