

A Systematic Review of Current Narratives on the Capacitation of Community Leaders in Addressing the Challenges Associated with Climate Change Mitigation and Adaptation

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Abstract

In many countries worldwide, community leaders (CLs) play a crucial role in mobilizing efforts for climate change adaptation. However, due to a lack of capacity at the local leadership level, several local-level initiatives for climate change mitigation and adaptation have not been effectively implemented. Most of these initiatives frequently exclude local decision-makers and key community stakeholders. This paper addresses the urgent need for the scientific community to develop innovative strategies that facilitate the meaningful implementation of informed climate change policies. It emphasizes the importance of collaboration among researchers, policymakers, and practitioners to develop actionable solutions at the local-level. Through a systematic literature review-based assessment, this paper aims to empower CLs through multilevel governance, participatory learning, and transformative leadership initiatives. It highlights the benefits of proactive and effective community leadership. The findings underscore the need for capacity building, inclusive decision-making, and collaborative governance to ensure successful climate change adaptation. Ultimately, this paper stresses the importance of timely action. By empowering CLs, we can ensure the effectiveness of adaptation and mitigation initiatives, contributing to a more sustainable future.

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Keywords

Adaptation; Capacitation; Climate change; Community leaders; Mitigation

1. Introduction

In contemporary discourses on climate change adaptation and mitigation (CCAM), one of the challenges that is being debated by many scholars is centered on how to enhance the abilities of community leaders (CLs) to effectively address the persevering challenges posed by climate change (CC) (Basupi, Quinn & Dougill, 2017; Seddon et al., 2021). As our planet grapples with the impacts of CC, the role of CLs in guiding local action becomes increasingly crucial. While there is substantial evidence that adaptation guidelines and CC mitigation strategies are becoming more available (Ofoegbu et al., 2019), many of these resources tend to follow mundane and step-by-step approaches that do not advance the effective implementation of CCAM strategies. In other words, the failure to meet CC targets raises questions about why the necessary actions have not been taken on the desired scales and at the desired pace (Leck & Simon, 2013; Eisenack, et al., 2014). In isolated cases where rural communities show eagerness to take action, they often lack the required capacity and support to make progress (Dixon and Stringer, 2015; Mcleod et al., 2019). However, CLs have the potential to play an important role in co-designing and implementing CC guidelines (Mcleod et al., 2019; Antwi-Agyei and Stringer, 2021). This is because their influence can shape how their communities

respond to CC risk mitigation and resilience building (Roberts, 2008; Beccari, 2016; Ofoegbu et al., 2019). In this study, the term "capacity" refers to the ability to inspire, guide, and mobilize community members in their efforts to adapt to and mitigate CC. Meanwhile, a community leader is an individual who influences, advocates for, and represents their community, often serving as a link between external organizations and authorities. Therefore, this article sought to understand the challenges faced by CLs and explore ways to enhance their ability to navigate the complexities of climate change adaptation. Through this study, we endeavor to navigate the currents of ongoing discussions, examining the significance of empowering CLs as catalysts for resilient and sustainable responses to the pressing challenges presented by CC.

2.Literature review: Community leadership in climate change adaptation

As the impacts of CC become more evident worldwide, development agencies and policy actors are experimenting with different approaches to promote climate-adaptive development at the local level (Naya S. Paudel, 2013; Sumner and Mallett, 2013). Scientists have raised significant concerns about the practical implementation of global CC protocols, emphasizing the need to bridge the gap between scientists and other stakeholders to promote coproduction, and shareability of knowledge, and enhance the development of more inclusive and effective policies and co-implementation. However, it is also recognized that the impacts of CC are diverse and context-specific. The findings from the Intergovernmental Panel on Climate Change (IPCC) highlight the need for further progress (Steiner, 2018; Cradock-Henry, 2020). The successful implementation of scientific guidance requires active participation and capacity building among key stakeholders involved in the adaptation process but also capacitated.

2.1. The importance of localized climate action

Given the imperative to prioritize locally driven initiatives, the mantra "think globally and act locally" has gained recent prominence. For instance, in many countries, there is a growing recognition that local adaptation initiatives, such as community-level climate change mitigation, are increasingly seen as more feasible than global initiatives. Echoing the oft-cited philosophy of "think globally and act locally," which encourages individuals to consider the world as a whole and take action in their communities to address global challenges (Spires and Shackleton, 2018; Veness et al., 2022). Geddes first introduced the phrase "think globally, act locally" as a philosophical imperative underlying progressive urban planning (Roberts, 2008). Thus, there is a need to promote a global vision of what should and should not be done to address CC, while also involving and supporting community members and their leaders in implementing global CC protocols. This study further argues that CLs are often best positioned to implement adaptation measures (Mavhura, 2017; Musarandega et al., 2018) due to their extensive knowledge of the local environment and their access to resources. Therefore, there is a need to focus on CC initiatives at the local level (Agrawal et al. 2009).

2.2. The role of community leaders in climate change adaptation

In cases where global policies must be applied, there is a perception that ongoing commitment is required, and local action serves as a modest step toward mitigating CC (Leck & Simon, 2013). For this reason, CLs are seen as the linchpin for community-driven initiatives. This view is based on practical experience, as CLs are often considered either catalysts or barriers to CC initiatives (Eisenack et al., 2014; Musarandega et al., 2018). Conversations and activities to empower community leadership continue to be at the center of debates and actions to address CC in developing countries (Ofoegbu et al. 2019). Therefore, it is important to explore how CLs can be empowered and how this shared responsibility can be embraced to achieve global CC goals. However, the transferability of this and other valuable insights is limited by a reluctance to acknowledge the necessary actions for meaningfully achieving the SDGs for a habitable planet.

Considering that CC is the story of two key issues: one is a risk, and the other is an adaptation, community leaders (LLs) are expected to play a critical role in managing risk and helping local communities adapt to CC (Musarandega et al., 2018). This is attributable to the fact that, in many regions-Africa, the Americas, and others-implementation of global CCA initiatives has been unevenly effective (McLeod et al., 2019; Ofoegbu et al., 2019; Antwi-Agyei & Stringer, 2021). From a scientific perspective, while CLs are expected to facilitate the implementation of CCA

strategies, the scientific community continues to provide little of the support needed to achieve this goal (Roberts 2008; Musarandega et al., 2018). Moreover, despite all the evidence from the literature that CLs are significant contributors to CC mitigation, there is little evidence to date on how we can build the capacity of CLs to support the proactive implementation of climate-smart adaptation strategies. This communicative disjunction needs to be reconsidered, as CLs play an important role in enabling their communities to translate CCA strategies into actionable measures (Musarandega et al., 2018). Thus, while CC guidelines, policies, and strategies are important, it is crucial that there is adequate support to implementers and improve its uptake.

2.3. Challenges faced by community leaders

While all the evidence supports the relevance and necessity of empowering CLs, it is equally important to consider the challenges they face. Understanding these challenges is crucial for tailoring effective, context-specific strategies for implementing global guidelines on CC. As previously highlighted, the challenges confronting CLs in implementing these guidelines are diverse and interlinked. For example, CLs must convince external stakeholders, such as governments and businesses, to take meaningful action on CC, while also motivating their communities to act on CC and managing the conflicting interests of various stakeholders. By way of explanation, local politicians may be reluctant to support actions and initiatives aimed at mitigating CC due to pressure from their constituents or other vested interests (Eisenack et al., 2014). Other challenges, well-documented in the literature, include a lack of resources (Nyahunda & Tirivangasi, 2022), limited public awareness (McLeod et al., 2019), and lack of political will (Eisenack et al., 2014). Therefore, achieving successful implementation of CC policies requires a community-driven approach, underpinned by a commitment to understanding local contexts and substantial investment in capacity-building. Therefore, this study aims to provide insights into enhancing the effectiveness of CC policies and improving the role of community leaders in addressing CC, with a focus on understanding the efficiency of policy implementation. The following research questions were used to guide the study objectives: (i) What challenges do CLs face in coping with the risks and impacts of CC? (ii) What capacities do CLs need to effectively communicate climate information and build resilience in their communities?

3. Materials and Methods

In this study, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) scheme was used to guide the methodological process and filter the relevant literature from the databases. The PRISMA system was preferred because of its ability to improve the quality of reviews and analyses (Moher et al., 2009) and its appropriateness for the synthesis of empirical evidence in answering wide-ranging research questions (Liberati et al., 2009). Although the PRISMA process has some strengths, the search process can be challenging, and relevant studies might be missed due to issues with indexing, keywords, or publication bias (Moher et al., 2009). Therefore, the snowballing technique was used in this study to constantly update the literature used in this study and find those that were likely missed.

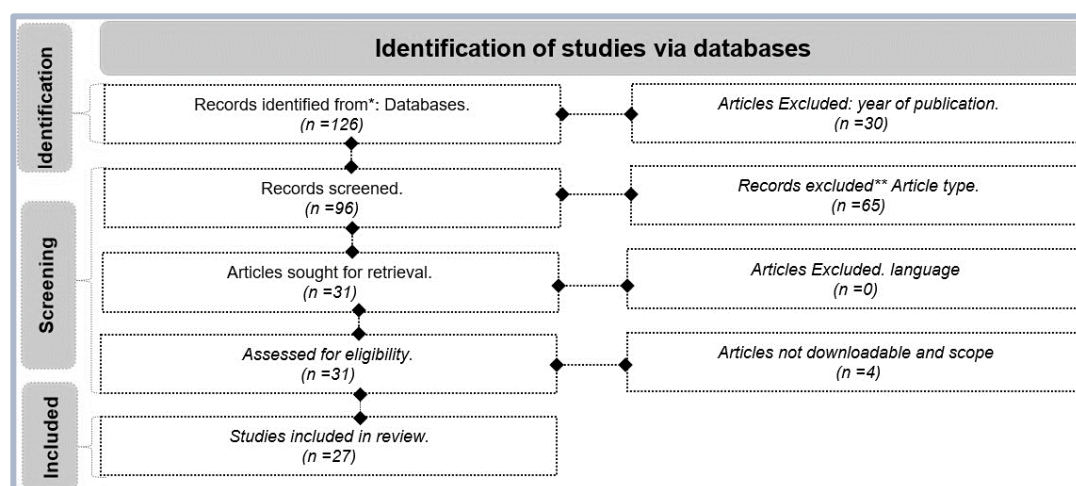


Figure 1. Flow chart of literature review-based articles that were excluded and included in this study. (Source: Authors' own based on sources from secondary sources)

The above innovative triangulation approach allowed for a comprehensive and robust screening process, leveraging the systematic and transparent nature of PRISMA with the flexibility and adaptability of snowball sampling (Liberati et al., 2009, Moher et al., 2009). The initial search, with its primary focus on South Africa, included a rigorous screening of all publications based on title, abstract, and keywords, that were designed to capture this study’s most relevant articles. In this explorative study, the following keywords were used as peg-mark guidelines for abstract-based articles: capacity, leadership, adaptation, community, and climate change (Table 1). We were able to identify 126 articles were identified, 30 of which were excluded based on their year of publication. This current study limited the screening criteria to articles published between 2011 and 2023, ensuring a focus on the most recent and relevant research in the field, aligned with current issues and debates (Moher et al., 2009.) The second phase of this initiative targeted peer-reviewed articles in internationally visible journals. This screening involved the exclusion of 65 publications that did not meet this study’s above-mentioned criteria (Figure 1). Thereafter, a total of 31 peer-reviewed articles were further assessed for their eligibility with none of them being excluded based on language as they were all written in English This sampling yielded 27 articles that we considered to be relevant for this study (Figure 1). To enhance the global relevance of the study, additional articles (7) from the reference list were deliberately chosen`

Table 1: Boolean operators were used to extract relevant articles for this explorative study. (Source: Author's own based on sources from secondary sources)

Boolean operator	Criteria	Articles
TITLE-ABS-KEY (community AND leaders AND "climate change" AND adaptation AND mitigation AND capacity AND rural AND communities AND "Southern Africa")	Keywords	126
TITLE-ABS-KEY (community AND leaders AND "climate change" AND adaptation AND mitigation AND capacity AND rural AND communities AND "Southern Africa" AND PUBYEAR > 2011 AND PUBYEAR < 2023	Year	96
TITLE-ABS-KEY (community AND leaders AND "climate change" AND adaptation AND mitigation AND capacity AND rural AND communities AND "Southern Africa" AND PUBYEAR > 2011 AND PUBYEAR < 2023 AND (LIMIT-TO (DOCTYPE, "ar"))	Article type	31
(TITLE-ABS-KEY (community AND leaders AND "climate change" AND adaptation AND mitigation AND capacity AND rural AND communities AND "Southern Africa" AND PUBYEAR > 2011 AND PUBYEAR < 2023 AND (LIMIT-TO (DOCTYPE, "ar"))) AND (LIMIT-TO (LANGUAGE, "English"))	Language	31
Final sample (after further screening)	-	27

Table 1 above shows a step-by-step procedure on how articles for this study’s articles were retrieved from Scopus with its Boolean operators being created by combining pre-screened keywords.

3.1. Data analysis

Thematic analysis of the qualitative data was carried out using the ATLAS ti.23 software. The data were systematically coded and organized into broader themes, such as "Technical understanding of climate change issues," "Leadership capacity," and "Familiarity with community resources." By way of definition, coding involves systematically labeling segments of qualitative data with shortcodes that capture key ideas, patterns or themes. Thus, the process involved labeling key segments of data and refining these codes to create meaningful categories that reflect important insights. Additionally, ATLAS.ti23 facilitated the creation of visual representations, like network diagrams, which enhanced our understanding of the relationships between different themes and data sources.

4. Results

Having outlined the systematic approach employed in this literature review, which offers a detailed overview of the current narratives on capacitating CLs to address CCMA challenges. The following section presents the results of the current study. The results included the following, 1. Technical understanding of climate change issues, 2. Familiarity with community resources, 3. Leadership capacity, 4. Communicative acumen is imperative for community heads, 5. Accountable for the accuracy of the information they present and 6, Ability to mobilise resources for climate change mitigation. These findings highlight the critical role of CLs in addressing CC challenges and underscore the need for targeted capacitation efforts to enhance their effectiveness. Although this paper is premised on reasonings that are premised on the overdue need to capacitate CLs. This paper provides an argument that is since the success of CLs is contingent on collaboration with key stakeholders’ examples of which include NGOs and other players. Against this

background, this study sought to answer the following question which dwells on what skills CLs must develop to effectively communicate informative CC perspectives.

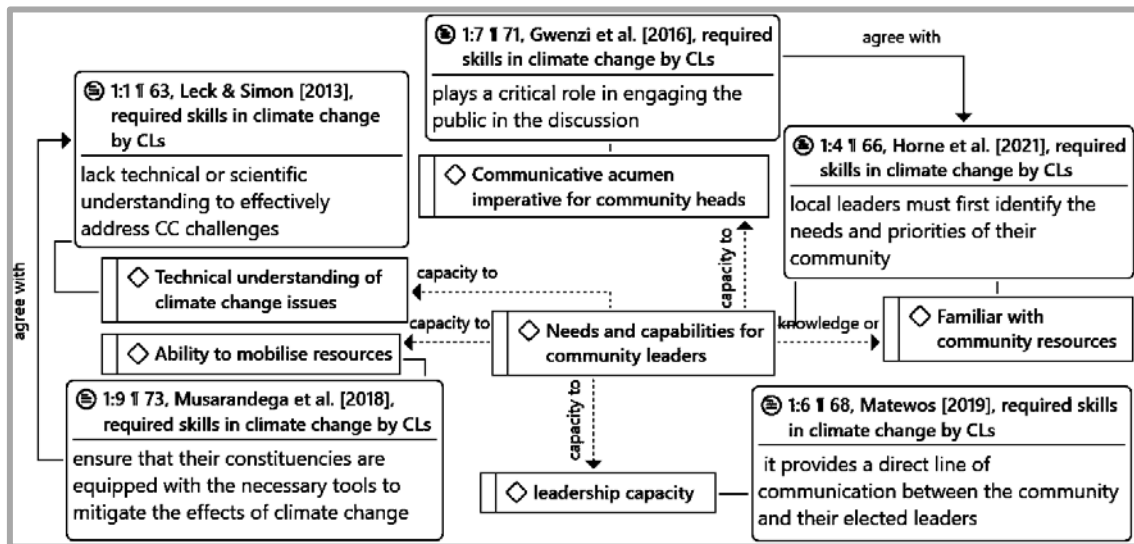


Figure 2: Network diagram illustrating the capacity needs of CLs. (Source: Author's own based on sources from secondary sources)

5. Discussion

5.1. Technical understanding of climate change issues

Based on instructive insights from the literature, CLs often lack the technical and scientific understanding to effectively address the challenges of CC (Figure 2). Broadly, this circumstance limits their ability to implement appropriate measures for the effective co-optation of tractable adaptation strategies (Leck and Simon, 2013; Musarandega et al., 2018). This is so because the literature on this narrative convincingly points to the overdue need for mentorship programs and trainings that bring together CLs and experienced experts in the field to offer valuable guidance and instructive insights (Antwi-Agyei and Stringer, 2021). Some scholars however contend that an excessive focus on directly providing technical support diminishes the relevance of the wisdom that is inherent in community leadership (Musarandega et al., 2018; Muchaku et al., 2019). Similarly, other scholars (Seddon et al., 2021; Muchaku et al., 2023) argue that the 'only modern, and non-indigenous' knowledge inclinations might inadvertently invalidate the relevancy of adoptable and adaptable IK. This reasoning is premised on the fact that technical skills are undeniably important for CLs and, a balanced approach that integrates their skills with communally based wisdom. This goes beyond simplistic facilitation of the shareability of knowledge by creating space networking and collaborative sharing of ideas. This is so because leadership in the context of adaptation to CC is not solely a straitjacket endeavor; that can be achieved without mobilizing communities and fostering their cooperation.

5.2. Familiarity with community resources

One of this review's major findings is that CLs need to be familiar with communally owned resources whose tutelage is bestowed on them by virtue of natural heritage (Matewos, 2019, Roberts, 2008). This and other understandings are vital for the meaningful espousal of communicative approaches that are centred on resilience-building. Unfortunately, however, the lack of familiarity with community resources among CLs continues to be one of the reasons why it is difficult for them to efficiently allocate resources (see Figure 2) in terms of financial, pecuniary investments and human resources (Matewos, 2019). This assertion is supported by the community development theory, which suggests that knowledge of local resources promotes of sustainable practices (Gwenzi et al., 2016). In view of these and other considerations, it is apparent that our understandings of CC and how this is related to the sustainable bestowal of a habitable planet is intrinsically depended on our abilities to meld with nature. through the objectively informed assimilation of climate-friendly adaptation and mitigation strategies. This argumentation is premised on the fact that, CLs are obliged to collaboratively engage conjoint projects that involve informed resource mapping and wide-ranging data collection efforts.

5.3. Leadership capacity

Another notable finding of this study emphasises the necessity for CLs to possess knowledge, foresights, and the ability to develop viable CC solutions (Figure 2). This reasoning is supported by the fact that most of what is available in the contemporary literature repeatedly emphasises the pivotal role of leadership capacity in addressing the persevering challenges of CC. This perspective is widely espoused by scholars such as Musarandega et al. (2018) and Seddon et al. (2021) who argue that CLs leaders must possess the necessary capacities to undertake vital actions in CCAM. This is exemplified by the fact that CLs must possess the ability to motivate and engage a diverse range of stakeholders- spanning from youth to older people, women, and men in building resilience within their communities. This positioning is empirically informed by the fact that community-level leadership is indispensable and vital for the meaningful adoption and implementation of CCAM strategies. These and other narratives provide usable insights that are potentially capable of advancing our way forward. Given this background, it becomes crucial to identify and to empower simpletons but to go further by capacitating their limited capabilities.

5.4. Communicative acumen is imperative for community heads.

The literature illustratively demonstrates that the effective communication of skills to CLs is pivotal in engaging the public and enhancing their understandings of the importance of addressing the challenges of CC (Roberts, 2008; Eisenack et al., 2014; Musarandega, Chingombe & Pillay, 2018). Toward an informed reconciliation of discursive narratives on CC what is apparent is that leaders must also possess abilities to actively inspire their citizens by instilling a sense of urgency for change. This communication is informatively useful because it not only holds community leaders accountable for their actions but goes a step further by offering useful insights on how to progress community efforts and awareness. Given the fact that most research findings suggest that, sound foundations of good and open communicative knowledge are dependent on inputs from other players (Leck & Simon, 2013; Mcleod, et al., 2019) it is apparent that there is urgent need to revisit our research agendas. Scholars such as in the likes of Roberts (2008 and and Mcleod et al., (2019) underscore the importance of transparency, advocating for the informed assimilation user-friendly strategies that enables critics per. In this context, the timely dissemination of information about CC questions, and the sharing of critical issues feature as some of imported issues in the ongoing CC narratives.

Leaders must effectively communicate the scientific, economic, and social repercussions of CC to their constituents. Accomplishing this requires informed communication of knowledge on the impacts of CC, As indicated earlier, proficient communication potentially enables CLs to effectively address CC challenges by better informing their constituents about mitigation strategies through the sharing of concise information without which CLs are unable to initiate meaningful dialogues. This communicative approach extends to the dissemination of information about local initiatives that include but are not limited to renewable energy projects, energy efficiency measures and other endeavours that are aimed at reducing carbon emissions. These insights are critical in instilling a sense of urgency and fostering public participation in CCA. furthermore, effective communication acts as a bridge between diverse stakeholders, such as local businesses, community groups, and government agencies, facilitating collaborative efforts in CCAM. Ultimately, this study concludes that successful communication methods are community-specific, necessitating constant adaptation and adjustment.

5.5. Accountable for the accuracy of the information they present.

Researchers such as Horne et al. (2021) underscore the crucial role of access to accurate and up-to-date information on local climate in addressing CC risks. Beyond the emphasis on accessing precise information, there is equal importance in empowering CLs, ensuring their comprehensive understanding of the significance of presenting information accurately, engagingly, and in a timely manner. The literature offers abundant evidence that political interference can result in misinformation about CC (Oladejo and Erundu, 2020). A notable example of this is the frequent encounter of CLs with political resistance, which hinders the implementation of climate protection measures, thereby undermining effective climate action. This current study argues that their ability to resist pressure hinges on CLs fully grasping the importance of disseminating accurate information. Thus, addressing this challenge calls for the development of clear and standardised reporting protocols. These protocols should empower CLs to provide

feedback to their constituents on their progress and receive input on the most effective strategies for addressing CC. This approach ensures the consistency and accuracy of the information shared.

5.6. Ability to mobilize resources for climate change mitigation.

Recent studies highlight the crucial role of CLs in mobilizing resources for to empower their constituencies with the necessary tools to counter the effects of CC. In their capacity as community leaders, they are expected to mobilize resources by collaborating with local governments, encouraging businesses and local communities to adopt energy-efficient technologies, and reducing emissions (Mavhura, 2017; Matewos, 2019). Additionally, they should coordinate with other stakeholders and provide feedback to their constituents. Scholars in the likes of Musarandega et al., (2018) suggest that CLs can contribute more by organising events and championing campaigns to educate local communities about the importance of climate action and the specific measures that must be implanted to reduce GHG emissions. This explains why, CLs have immense potential to play a crucial role in enhancing the abilities of local communities to adapt to CC and creating space for the mobilization of resources that are needed to reduce the emission of GHG.

The inability of CLs, to mobilize sufficient resources has been identified as one of the factors that contribute to the inadequate implementation of CC strategies (Dulal, 2014; Gitonga, 2020). Unfortunately, however, they are uniquely positioned to convince and educate people on the overdue need for immediate adherence to the assimilation and constructive implementation of CCAM strategies (Mavhura, 2017; Meyer and Börner, 2022). Without their active involvement in doing so, achieving compliance will continue to be a challenge that needs to be confronted and addressed. After recognizing the challenges confronting the mobilization of resources that are needed to implement CCAM strategies from the works of Ofoegbu et al., (2019, Antwi-Agyei and Stringer (2021), and many others, this study suggests that the time to act is now by empowering CLs in tandem with similar initiatives to engage other key stakeholders.

6. Recommendations for further studies

One of the key themes in Figure 3 highlights the importance of including CLs in the codesign and coimplementation of the CCA&M strategies. This ensures that local knowledge and perspectives inform decision-making and garner community support, enabling communities to adapt and align with global demands. Further research can explore how community leaders can lead collective action on informed CC intervention strategies, addressing gender-based biases and dynamics that hinder effective implementation. Additionally, continuous learning is crucial for CLs to stay updated on CC information and technologies, such as mobile apps and online platforms, which can provide valuable data. This learning process should identify skills required to enhance their proficiency and prevent them from being left behind in CC efforts. Sustained partnerships and necessary support are also essential for community leaders to work cooperatively with key stakeholders.

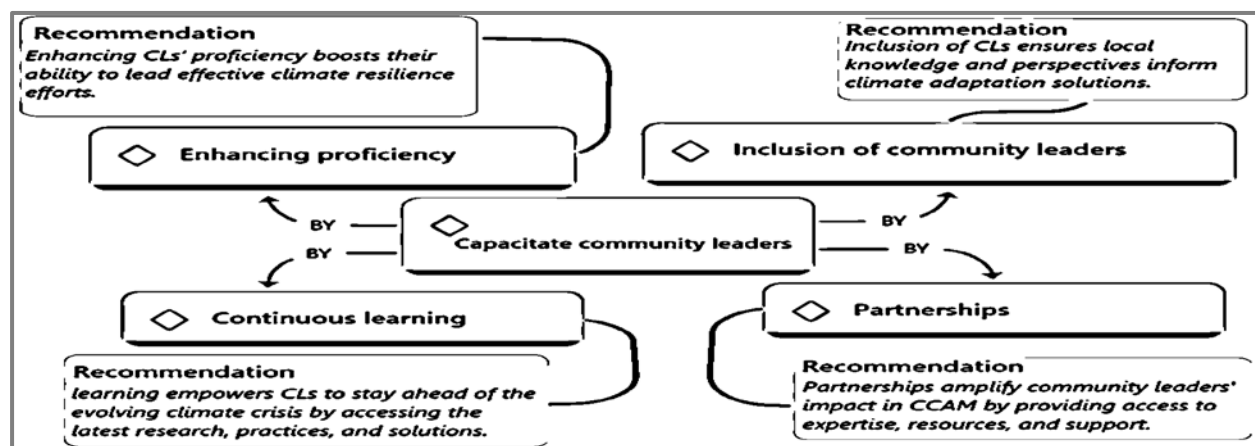


Figure 3: A synoptic overview of our recommendations on the way forward (Source: Aurther's own based on sources from secondary sources)

6.1. Implications for Policy

This study has the potential to provide useful insights that are helpful in guiding policy formulation and implementation. Added to this is the fact that the lessons learned from this study are potentially capable of informing the design and implementation of different policy-oriented CC adaptation strategies.

7. Conclusions

This article provides an overview of the challenges that continue to undermine the assimilation of CCAM strategies. It emphasizes the importance of empowering CLs as leaders in addressing the challenges of CC. This is critical to ensuring that vulnerable communities are not left behind and that CCAM efforts are equitable. To achieve this, CLs need the necessary resources and training to lead CCAM efforts. This research has uncovered several barriers that CLs face, including limited resources, knowledge gaps, and communication skills. Although the list of narratives provided in this submission may not be exhaustive, they still border on common challenges that confront CLs when they attempt to address CC risks. Additionally, this paper argues that collaboration with key stakeholders, such as NGOs, is crucial for the success of CLs. In light of these points, this study explores the skills CLs need to effectively communicate informative CC perspectives.

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Ethics approval

Not applicable.

Conflict of interest

The author(s) declare that there is no competing interest.

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