Kabarak Journal of Research & Innovation

https://journals.kabarak.ac.ke/index.php/kjri/

RESEARCH ARTICLE

COMMUNICATING POLICIES FOR ENHANCED CLIMATE CHANGE ADAPTATION AMONG SMALLHOLDER FARMERS IN LAIKIPIA COUNTY IN KENYA

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Submitted:24th June 2025; Accepted: 15th September 2025; Published (online): 17th September 2025

ABSTRACT

The study focused on how climate change policies were being communicated among smallholder farmers to promote effective adaptation for food security and community resilience. It was believed that several climate-related policies were being developed and communicated by national and county governments and other stakeholders. However, very little was known about the entire climate policy communication ecology. Using a sample of smallholder farmers and local stakeholders, the study aimed to discern how climate change policy communication worked in Laikipia county. Results indicate that how policies were implemented were predicated on communication with key players who are farmers. The problem of lack of implementation was related with where, when and how policies were being communicated to the farmers.

Key words: Adaptation, Agriculture, Antony Gitonga, Climate Change, Communication Policies, Laikipia, Mitigation, Smallholder farmers, Tigithi, University of Nairobi

INTRODUCTION

Smallholder farmers make up 60% of the global agricultural workforce and control 75% of the world's farmland (Alkire, 2017). Food consumption in developing countries is 80% due to over-population, climate challenges, and poverty. Climate change worsens as human reliance on eco-systems depletes resources (Coulibaly, 2010). Anthropogenic activities accelerate global warming (Pica-Ciamarra *et al.*, 2011), with Africa facing the worst effects, especially in agriculture and pastoralism (Herskovitz, 2011). Sub-Saharan Africa, with its high population and weak infrastruc-ture, is most vulnerable. Despite mitigation efforts, carbon levels are already high, and climate change effects persist. Nations have committed to reducing emissions, adapting to change, and sharing climate data, with legal obligations under the UNFCCC (Alkire, 2017). Climate change is widely acknowledged as a global threat, with countries implementing policies and funding initia-tives despite lacking global enforcement (Mmboroki, 2018).

Kenya has robust national and local climate policies, participates in global climate governance, and integrates climate concerns into development plans. However, policies must move beyond

boardrooms to impact local communities (LCDP, 2017). Climate change has intensified conflicts, weakened local economies, and worsened infrastructure across Africa (Khalid, 2011). Effective resource management requires understanding socioeconomic and environmental contexts (Bohnet *et al*., 2011). Sub-Saharan Africa is especially vulnerable due to overreliance on agriculture, weak infrastructure, and high poverty levels (Doss, 2014; Iheoma, 2014). Limited access to resources constrains adaptation efforts (Lamboll, 2017). Climate change has long-term effects on agricultural productivity and regional development (Hansen, 2012).

Kenya's agricultural output faces serious threats from climate change, with shifting weather patterns disrupting crop cycles (NCCAP, 2018-2022). Droughts are increasing, straining water supplies, particularly in dry areas like Laikipia County. Farmers struggle with low profitability and unreliable rainfall (Huho & Kosonei, 2013). Conventional farming in Laikipia is costly (Kaumbutho & Kienzle, 2007), yet despite awareness of conservation agriculture's benefits, adoption remains low (Kinyumu, 2012). Studies highlight poor adaptation among pastoralists (Mboroki, 2013), but none examines how climate change policy communication aids or does not aid smallholder farmers in Laikipia County.

The general objective of the study was to explore how climate change policies were being communicated among smallholder farmers in Kenya to support adaptations. Specifically, the study sought to to determine the extent to which climate change policies are communicated to smallholder farmers in Laikipia County; examine the sources, media, time, and frequency of climate change policy communication to the smallholder farmers in Laikipia County; explore the extent of farmer participation results from climate change policy communication; and to assess community actions and adaptations resulting from policy communication

The extent of climate change policy communications to smallholder farmers in Kenya

Kenya's agricultural sector is increasingly vulnerable to climate change, with unpredictable rainfall patterns and prolonged droughts disrupting farming activities (NCCAP, 2018-2022). Smallholder farmers, particularly in Laikipia, face challenges such as high input costs and low yields despite being aware of the benefits of conservation agriculture (Huho & Kosonei, 2013; Kinyumu, 2012). While policy communication plays a crucial role in climate adaptation, many farmers lack access to clear and practical policy information (Mboroki, 2013). Effective climate change policy communication requires well-defined objectives, knowledgeable communicators, and direct engagement with smallholder farmers to ensure they understand adaptation strategies and policy measures (Ferrari, 2010; Andrey & Mortsch, 2000). Successful communication involves timely, accessible, and credible information delivered through multiple channels, including workshops, online databases, and local advocacy networks (Weaver, 2007; Zulch, 2014). However, significant barriers remain. Policy complexity, limited stakeholder participation, and bureaucratic inefficiencies hinder effective dissemination of climate policies (Standing & Gachanja, 2014). Additionally, smallholder farmers often lack representation in policy discussions, with government officials and external consultants dominating decision-making processes (Stead *et al*., 2009). Addressing these challenges requires better information flow between national and local levels, increased funding for climate education, and a more inclusive approach to policy formulation.

Understanding climate change policy implementation through Participatory model

Participatory communication is gaining recognition in academia and development practice, shifting people from passive recipients to active contributors. Servaes and Malikhao (2005) stress the need for public involvement in development efforts, measuring success by the level of participation in decision-making. Past failures of top-down models show the importance of community input and dialogue (Karl, 2007). Chambers (1983) notes that expert opinions often overshadow local knowledge, but reversing this, fosters better information exchange (Chambers, 1993, 1997). Freire (1970) frames participatory communication as "people-centred development," crucial for implementing climate change policies. Smallholder farmers in Tigithi Ward, who are key stakeholders, must be involved in policy communication to ensure effective implementation. The UNDP (2011) advocates for a bottoms-up approach to sustainable forest management, while the UNFCCC highlights the role of participatory communication in forestry governance.

METHODOLOGY

The study used a mixed-methods approach to gather qualitative and quantitative data through a cross-sectional research design. Data were collected from smallholder farmers, the key informants, and community members via in-person interviews, consultative sessions, survey questionnaires, focus group discussions, and participant observation (Balsigier, 2004; Ramadier, 2004). Secondary data from climate change policies and development plans at international, national, and local levels were also reviewed. Household surveys provided deeper insights. In-depth interviews with key informants and focus groups assessed the role of communication in implementing climate change policies for adaptation. Interviews with selected farmers followed open-ended questionnaires (Hansen, 2012). Respondents were selected using stratified random sampling among smallholder farmers. Kothari (2008) recommends a minimum sample of 100 for qualitative studies. Trained research assistants, including local enumerators and experienced graduates collected the data. Qualitative data underwent thematic analysis, while quantitative data were analyzed using descriptive and inferential statistics.

Ethical Considerations

Written ethical approval was not sought for this study, based on the nature of study, participation was voluntary and no sensitive information was sought from the respondents. Additionally, the questionnaires used to collect the information were marked as anonymous and in cases where response was recorded or pictures taken, verbal informed consent was obtained. The authors declare that there is no conflict of interest as no gifts, honoraria or payment was given to either respondents or any local authorities to influence the research process or findings. This research received no specific grant from the University of Nairobi or from any funding agency in the public, commercial, or not-for-profit sectors.

RESULTS

Extent of communication of climate change policies in Laikipia County

Table 1 shows the extent of communication of climate change policies, regulations, and bylaws in Laikipia County. In Lamuria Village, most residents (21 out of 39) stated that regulations and by-laws were communicated to a moderate extent. A smaller group (9 out of 39) indicated that communication was to a great extent, while 6 residents felt it was to a low extent. Only 3 residents believed the regulations and by-laws were communicated to a very great extent. In Tigithi Village, a similar trend was observed, with the majority (33 out of 61) stating that communication occurred to a moderate extent. A significant portion (15 out of 61) believed it was to a great extent, while 11 residents felt it was to a low extent. Only 2 residents reported that communication was to a very great extent. In Solio village, half of the respondents (50 out of 86) indicated that regulations and by-laws were communicated to a moderate extent. A notable number (26 out of 86) reported a low extent of communication, while 8 residents believed it was to a great extent. Additionally, 1 respondent stated that no communication occurred, and another 1 resident believed the communication was to a very great extent.

Table 1 Communication of climate change policies, regulations and bylaws

Occupation	**Lamuria Village**	**Tigithi Village**	**Solio Village**
No extent	-	-	1
Low extent	6	11	26
Moderate extent	21	33	50
Great extent	9	15	8
Very great extent	3	2	1
Total	**39**	**61**	**86**

In Tigithi Ward, Laikipia County, the extent to which climate change policies, regulations, and by-laws are communicated varied based on available resources, government engagement, and community awareness. The Kenyan government has introduced policies such as the National Climate Change Action Plan and the Climate Change Act, which incorporate climate considerations into sectors like agriculture, energy, and water management. These policies include provisions for community engagement and awareness. The NGOs, international agencies, and community-based organizations (CBOs) supplemented government efforts through workshops, training, and outreach programs. County governments and village councils also disseminated climate-related information via community meetings and collaborations with local leaders.

Despite these efforts, challenges remained, including limited access to information and communication technologies, low literacy levels, language barriers, and competing socio-economic priorities. Traditional knowledge and practices in environmental conservation can enhance the effectiveness of climate change messaging by integrating community-driven sustainability efforts. Responses from the three villages in Tigithi Ward indicated differing levels of climate change communication. Lamuria Village respondents reported frequent, seasonal, or occasional communication. Solio Village responses varied from rare to consistent updates. Tigithi Village respondents noted an average to a large extent of communication.

A key informant from Tigithi Ward emphasized that communication is only effective if essential resources, such as water, were available to implement adaptation measures. Borehole drilling was cited as crucial for sustaining agricultural practices. Another source from Tigithi Ward highlighted the effectiveness of requiring official permits to cut trees, media campaigns, and community-driven tree-planting initiatives, which have significantly increased forest cover over the past decade. Secondary data show organizations like Kenya Agriculture and Livestock Research Organization (KALRO) have played a key role in promoting tree planting and maintenance. The assistant chief of Lamuria Location stated that chief barazas serve as primary communication channels. While effective, attendance remains inconsistent, with only about half of the expected participants showing up. Other methods include letters to schools, engaging religious leaders, and involving teachers and parents in climate discussions.

The Lamuria Location Chief noted that additional methods include field days, self-help groups, and women's organizations, where leaders disseminate climate information. Aloe vera collection was cited as an example of targeted engagement with welfare groups. Vernacular FM stations also help reach a broader audience. The Tigithi Location Chief reaffirmed that barazas remained essential for climate change communication. He discouraged deforestation, regulating bush clearance, and promoting sustainable land use. Caritas Kenya, the development and humanitarian arm of the Catholic Church, and agricultural extension officers work with farmers to encourage reforestation. Nursery owners provide seedlings, and community tree-planting efforts, such as a planned initiative to plant 9,400 trees at a Catholic Church, to support afforestation.

Concerns over deforestation and its impact on water sources were widely acknowledged. Local media, including Inooro, Kameme, and KBC, play a role in raising awareness about deforestation and tree planting. Regulations prohibit the cutting of indigenous trees, particularly those along watercourses, in order to protect fragile ecosystems. Partnerships with rural foresters and conservation groups reinforce these efforts. Central FM, based in Nanyuki Town, collaborates with local stakeholders to educate the public on afforestation and sustainable environmental practices. These findings underscore the importance of integrating community engagement, traditional knowledge, and resource availability into climate change communication strategies in Laikipia County.

Information on the people charged with the responsibility of communicating Climate Change Policies is provided in ***Figure 1***. Local leaders and community organizations were the primary communicators of climate change policies to smallholder farmers (32%), followed by the Ministry of Agriculture (18%), media channels (16%), farmer cooperatives (8%), faith-based organizations (5%), and international climate change programs (2%). Communication involved multiple stakeholders, including government agencies, NGOs, international bodies, research institutions, community groups, agricultural extension officers, and media platforms.

People Responsible with Communication of Climate Change Policies

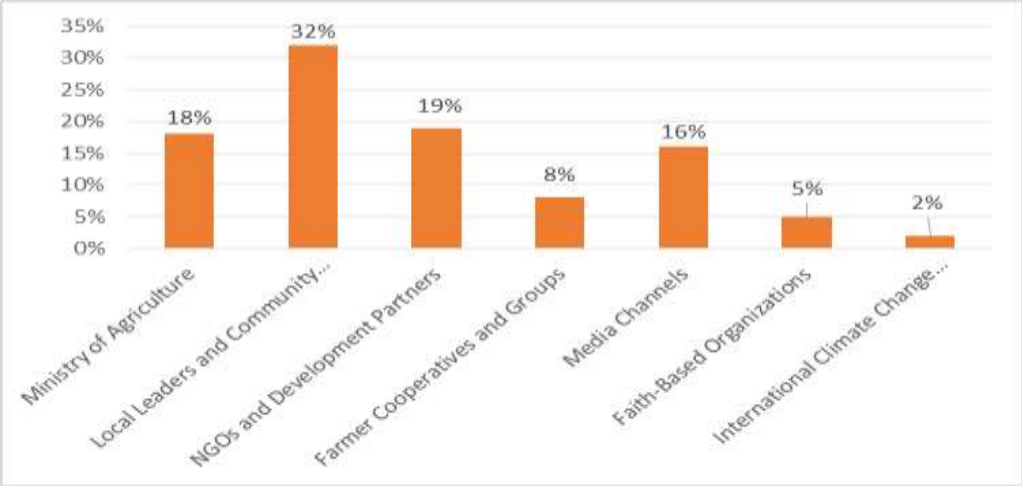

Figure 1: People Responsible with Communication of Climate Change Policies

In Lamuria, farmers received information from agricultural officers, village administrators, NGOs, county officers, and media. In Solio, sources included the county government, Nairobi Water Fund, area administrators, schools, experienced farmers, and livestock officers. Political and religious leaders, KALRO, and financial institutions also played a role. Communication methods included direct advice, community meetings, and informal knowledge-sharing among farmers. Farmers noted challenges such as water scarcity, unreliable rainfall, and lack of government intervention in water supply. They requested for boreholes drilling and better water access to implement agricultural advice effectively. Organizations like Kenya Climate Smart Agriculture Project (KCSAP), World Vision and Hand in Hand provided training, but access to water remained the main barrier. Water Resource Authority (WARMA) encouraged water conservation, but its outreach was limited. Farmers highlighted the need for government support in infrastructure, such as irrigation systems and better roads, to reduce dependence on food aid.

Key informants from Tigithi and Mazingira cited chiefs, village elders, church leaders, and environmental organizations like the International Small Group and Tree Planting Program (TIST) and KALRO as sources of information, emphasizing tree planting initiatives. Farmers received updates via community meetings, mobile messages, and local networks.

i. When and How Climate Change Policies are communicated

Farmers in Tigithi Ward emphasized the importance of timing climate change communication with key agricultural seasons, such as before planting or harvesting, to ensure relevance. Regular updates through agricultural extension programs were preferred to reinforce messages and provide access to the latest resources. Communication was often linked to events like policy launches, funding availability, or extreme weather occurrences. Sustained engagement, capacity-building activities, and adaptable strategies were seen as essential for effective outreach.

In Lamuria, climate change policies were communicated during church services, town notices, chief meetings, relief food distribution, and drought periods, usually once or twice a year. In Solio, communication happened through public barazas, community meetings, agricultural officers during planting seasons, media platforms, political rallies, and church gatherings, often seasonally or quarterly. Radio programs played a crucial role in regular information dissemination. Chiefs and local leaders noted resistance to shifting from traditional farming methods, such as planting maize despite inadequate rainfall. Efforts to promote drought-resistant crops like sorghum and wheat faced challenges due to market limitations. Conservation agriculture was encouraged, but overgrazing and improper residue management hindered adoption. Barazas remained the primary communication method, though attendance was inconsistent. Schools, religious institutions, and self-help groups were also utilized to spread climate-related messages. One-on-one barazas, agricultural field days, and nyumba kumi structures helped ensure direct engagement with farmers. Radio broadcasts and vernacular FM stations supplemented these efforts, broadening information access.

ii. Media or Channels used to communicate Climate Change Policies

The people from Tigithi Ward/Laikipia County stated that they learnt about climate change policies and regulations through various media, channels, and other modes of digital communication. Many governments have dedicated websites and publications that provide information on climate change policies, regulations, and initiatives. These resources often include official documents, reports, and updates on climate action plans and commitments. News outlets, including newspapers, television, radio, and online news platforms, often cover climate change-related topics, including policy developments, international agreements, and local initiatives. These sources provide updates and analysis on climate policies and regulations at the national and international levels. Social media platforms such as Twitter, Facebook, Instagram, and LinkedIn were used by governments, environmental organizations, and advocacy groups to share information and updates on climate change policies. These platforms allow for real-time communication and engagement with a wide audience. Local governments, NGOs, and community organizations often organized meetings, workshops, and public forums to discuss climate change issues, including policies and regulations. These events provided opportunities for community members to learn about climate policies, ask questions, and provide feedback.

It was also noted that schools, colleges, and universities may incorporate climate change topics into their curriculum, providing students with information about policies and regulations aimed at addressing climate change. Educational institutions may also host seminars, lectures, and events focused on climate policy and environmental sustainability. Environmental organizations and NGOs played a crucial role in raising awareness about climate change policies and advocating for stronger action. These organizations often publish reports, newsletters, and campaign materials to inform the public about climate policies and engage community members in advocacy efforts. There are numerous online platforms and portals dedicated to climate change information, including websites hosted by research institutes, think tanks, and international organizations such as the United Nations and the World Bank. These platforms provide access to research, data, policy briefs, and resources related to climate policies and regulations. Government agencies, NGOs, and community groups may conduct outreach programs to inform and educate communities about climate change policies and regulations. These programs may involve door-to-door campaigns,

community events, and partnerships with local leaders and organizations. By utilizing a combination of these media, channels, and modes of communication, policymakers and stakeholders can effectively disseminate information about climate change policies and regulations to communities and engage them in efforts to address this global challenge.

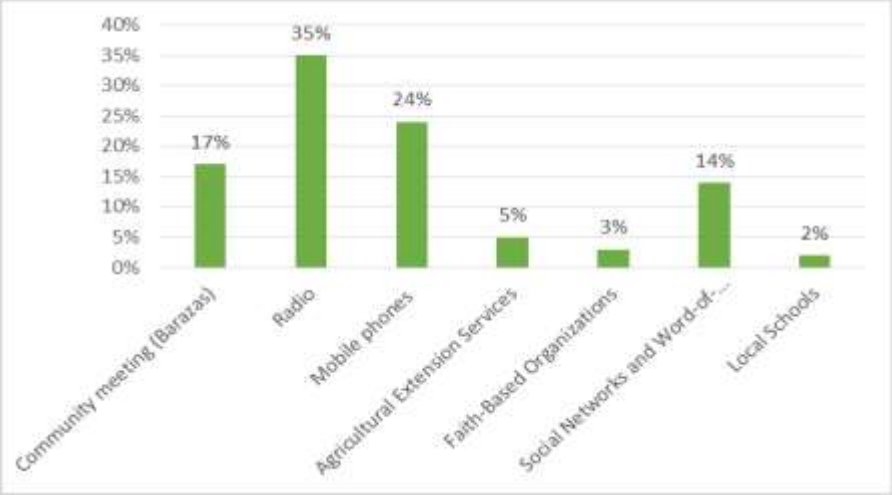

Figure 2: Media or Channels used to communicate Climate Change Policies

Figure 2 shows the usage of key media or channels in communicating Climate Change Policies. Radio was the primary source of climate change information for 35% of respondents, followed by mobile phones (24%), community meetings (17%), social networks and word-of-mouth (14%), agricultural extension services (5%), faith-based organisations (3%), and local schools (2%). In Lamuria Village, sources included Inooro Radio and TV, Citizen TV, SACDEP seminars, KTN Farmers TV, SMS from KEISAP, Google, meetings, stakeholder training, church announcements, and agricultural officers.

In Solio Village, respondents relied on FM radio programs (Mugambo wa Murimi), television, public barazas, village elders, SMS, phones, seminars, social media, NGOs, posters, and interpersonal communication. In Tigithi Village, sources included Inooro, Kameme, and Citizen Radio and TV, chief's advertisements, social media, newspapers, extension officers, barazas, farmers' group meetings, and church meetings.

Chief Tigithi noted that media discussions on deforestation have made the community aware of environmental risks. Deforestation near Mount Kenya has dried up rivers, causing water shortages. Local media like Nanyuki Central FM, Inooro TV and Radio, KBC, and Kameme inform residents about conservation. The community prohibits cutting indigenous trees, which are preserved along rivers. Dried wood is repurposed for building materials, while pondo trees are used for school and church furniture.

iii. Public Participation in Matters of Climate Change Adaption and Mitigation

Farmers in Tigithi Ward varied in their participation in climate change adaptation and mitigation based on communication effectiveness, policy relevance, and available resources. Effective communication raises awareness, linking climate impacts, adaptation measures, and policy support, and increasing farmer participation. Policies tailored to farmers' needs, offering incentives, technical support, and financial aid for climate-smart practices like agroforestry, soil conservation, and water management, encourage action. Access to funding, training, and extension services removed adoption barriers.

Involvement in decision-making and participatory approaches enhance policy effectiveness. Capacity-building through training and knowledge exchange strengthens farmers' ability to adapt. Peer influence and social norms shape participation, with farmers more likely to act when others do. Economic incentives like payments for ecosystem services, carbon credits, and certification schemes further motivate engagement. Addressing these factors boost farmers' role in climate resilience and sustainability. Lamuria respondents participated by maintaining kitchen gardens, planting sweet potatoes for soil erosion control, donating tree seedlings, growing fodder crops, using drip irrigation, planting indigenous trees, sharing information, and using certified seeds.
Solio respondents reported high participation (99%), moderate (50%), or low (20%), with varying levels influenced by rain patterns. Tigithi respondents participated daily, seasonally, or during barazas.

iv. Climate Change Adaption Activities

Farmers in Tigithi Ward engaged in various climate adaptation practices to enhance resilience and sustain agriculture. They diversified crops and livestock, practiced intercropping, and rotated crops to manage climate risks. Water management strategies include rainwater harvesting, storage, and efficient irrigation. Soil conservation methods such as contour ploughing, terracing, and mulching improved fertility and water retention. Agroforestry supported biodiversity and income through timber and fruits. Farmers mitigated livestock risks by providing shade, water, and disease prevention. Financial resilience was strengthened through crop insurance and diversified income sources. Knowledge sharing was through field schools and extension services which enhanced adaptation. Community-based initiatives, such as watershed management and disaster risk reduction, promoted collective action. Lamuria Village respondents engaged in rainwater harvesting, gabion construction, alternative cooking fuels, dam construction, biogas development, tree nurseries, crop rotation, water pumping, trench digging, and proper waste disposal. These actions contributed to climate change adaptation and environmental conservation.

Table 2: Climate Change Adaption Activities

	Lamuria Village	**Tigithi Village**	**Solio Village**
Planting Climate-Resilient Crops	9	14	20
Water Management	3	7	15
Planting trees alongside crops to improve microclimates	4	8	14
Fish Farming or Aquaculture	2	4	10

Engaging in Non-Agricultural Income	6	5	4
Using Renewable Energy Sources	3	3	5
Joining cooperatives or local resilience groups for shared learning and resources.	5	11	7
Planting trees to restore degraded land and capture carbon.	7	9	11
Total	**39**	**61**	**86**

Data on the Climate Change adaptation activities is provided in ***Table 2:*** Respondents from Solio Village indicated that water harvesting (use of dams, ponds etc.); planting of trees; minimal cutting of trees; building of terraces; reducing number of livestock reared; building of drainage systems'; farming; use of manure to add fertility to soil; tree planting; planting a short-term crop; planting animal feeds like hay; water harvesting; mulching to control evaporation of water from the soil; mixed farming; digging of water pans; use of modern farming technology that is considered to be environmentally friendly; digging zai pits to ensure a minimum use of the available water; planting trees; water harvesting and storage; use of petroleum gas; afforestation and re-afforestation; building gabions; use of modern jikos that do not consume a lot of charcoal; recycling of plastics; introduced tree nursery to village one for planting which other neighbors adopted, planting maize, beans, potatoes etc and kitchen garden with the help in establishing by hand-to-hand organization were the climate change adaption activities that respondents were personally involved in.

Respondents from Tigithi Location indicated that; Planting trees and avoid cutting trees; Water harvesting and digging dams; Manure preparation; Keeping livestock; Crop rotation and Zero grazing were the climate change adaption activities that respondents were personally involved in.

v. Communication Approaches to keep Community Updated on Climate Policies

Tigithi Ward/Laikipia County respondents use various communication methods to inform communities about climate change policies. Governments, NGOs, and advocacy groups run public awareness campaigns via TV, radio, and social media. Workshops, seminars, and town hall meetings provide engagement opportunities. Schools integrate climate change education into curricula. Online resources, including websites, blogs, and fact sheets, offer accessible information. Social media platforms disseminate updates and facilitate discussions. Journalists and media outlets provide news coverage. Local leaders and influencers amplify messages. Governments issue press releases, hold conferences, and publish reports. Citizen science projects engage the public in climate research. These communication approaches, as shown in ***Figure 3*** enhance awareness and policy engagement.

Policies

According to the findings, farmers use various communication methods to update households and communities on climate change policies. Community meetings and barazas (26%) are the most common, followed by local leaders and elders (15%), workshops and training (12%), social media

(11%), community-based organisations (CBOs) (9%), television and newspapers (7%), and SMS alerts and mobile apps (5%).

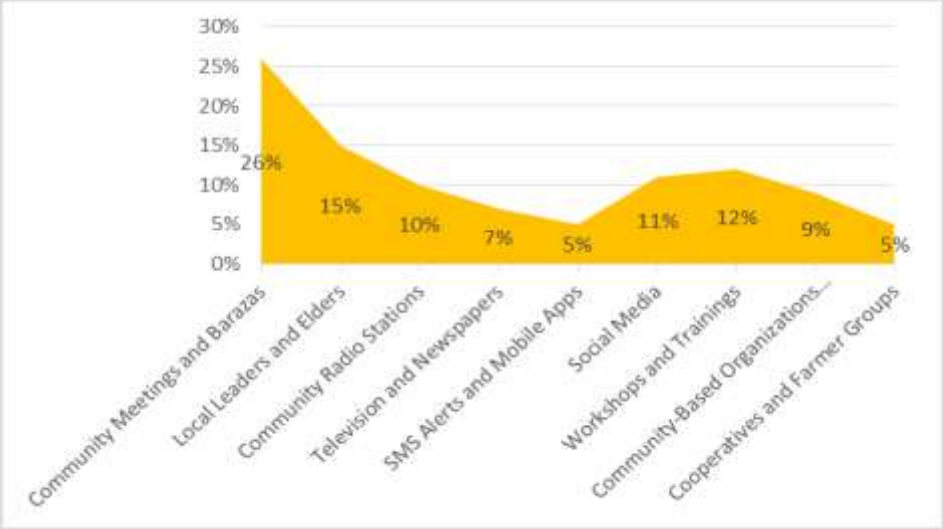

Figure 3: Communication Approaches to keep the Community Updated on Climate Change

In Lamuria Village, respondents rely on TV and radio updates, NGO workshops, self-help groups, chief meetings, newspapers, one-on-one stakeholder meetings, peer advice, and Ministry of Agriculture communication. In Solio Village, communication includes interpersonal discussions, government agencies, the meteorological department, text messages, agricultural officers, presidential addresses, newspapers, schools, churches, social media, traditional weather observation, welfare groups, NGOs, and posters. In Tigithi Location, common methods are radio, TV, chief and elder advertisements, social media, newspapers, barazas, church meetings, and women's groups.

DISCUSSIONS

Extent of climate policy communication

Ulo & Skendrovi (2010) showed that good communication plays a critical role in the successful implementation of policies, which corroborated the results. This foundation may be expanded upon and used by all other policy domains. The communication is successful if the message is received and accomplishes its goal. For measuring reasons, however, a more detailed and specific list of elements characterizing the effectiveness of the communication process is needed. Effective communication is essential to enabling stakeholders to overcome challenges and resolve conflicts when they emerge, as well as to keep them on track to achieve policy objectives.

According to Zulch (2014), these characteristics of good communication also include the value of receiving feedback, understanding the message and ensuring that it reaches the intended audience on time, ensuring that communication records are accessible to those who need them, keeping lines

of communication open amongst stakeholders, and making the most out of all team meetings. The relevance of the information being communicated and the prompt transmission of feedback are two essential elements of effective communication. The researcher also emphasizes the qualities of trustworthiness, honesty, and sincerity. To ensure effective communication, the research also suggests selecting the appropriate messenger and medium and minimizing transmission noise. Additionally, the author suggests that effective communication must result in the desired goal for the communicator.

When stakeholders get accurate, timely, and reasonably priced information, communication is considered effective. They also know that communication should be reproducible, simple to learn, and accessible to feedback. Bourne (2016) says that it's critical to consider the distinct viewpoints and approaches of stakeholders while engaging with them. A number of other factors that contribute to effective policy communication are also acknowledged in the study, including fulfilling the intended purpose of the information, defining the communication's purpose, adjusting the message for a specific audience, repeating the message as needed to get the desired outcome, making the information easily accessible, and utilizing a variety of distribution channels.

On the other hand, there are a number of barriers to brief and clear policy communication. Elaborate policy text, corporate culture, and team trust are a few examples of factors that have been emphasized in a number of literary works as barriers and facilitators of successful policy communication. Policy complexity is influenced by a multitude of stakeholders and cross-organizational information exchange, according to Stead *et al*. (2009). It is difficult to conduct productive discussions about policy because of its intrinsic nature. People might reassess their past knowledge in a number of disciplines when they collaborate. To keep everyone informed, effective communication plans, tactics, and tools are needed. Expectations get misaligned and issues emerge when people don't know why the policy is in place or how to participate in its implementation. As a result, effective communication is essential and should be employed throughout the process of developing and implementing policies, supported also by Muszyska (2017).

Sources, media, time and frequency of climate change policy communication

Whitmarsh (2008) supports the findings, arguing that mass media significantly influence public understanding and attitudes on climate change policy. News media—newspapers, television, and the Internet serve as a bridge between scientists and the public, shaping perceptions of scientific topics. Some researchers have examined how popular culture, such as The Day After Tomorrow, affects climate awareness. However, media sensationalism and alarmism may hinder public engagement. Media framing plays a crucial role by highlighting key concerns, linking events, assigning responsibility, and suggesting solutions. Studies show national differences in media portrayals: Sweden and Germany emphasise certainty that human-induced global warming causes climate change, while US climate skeptics often use "scientific uncertainty" to undermine concern. Journalists' tendency to present opposing views equally has created the false impression that climate scientists are divided. In the 2000s US, this "balanced reporting" contributed to policy and public uncertainty, though scientific uncertainty framing has declined in US media (Boykoff, 2007; Zhao et al., 2011).

Boulianne, Lalancette, and Ilkiw (2020) highlight Greta Thunberg's activism, showing how youth-led protests pressure governments on climate change. Social media spreads awareness globally, breaking the "six degrees of separation", enabling instant worldwide connections. It has amplified climate discourse but often presents content in technical terms, limiting public engagement. Pearce et al. (2019) argue future research should focus on public perceptions and social impacts of climate change, not just scientific communication.

Extent of farmer participation in climate policy implement as result of communication

The study aligns with DSE (2005), which defines engagement as a two-way process involving community participation in policymaking, planning, decision-making, service provision, and assessment. Such involvement enhances trust, transparency, local input, and ownership. Community participation is essential in climate change mitigation and adaptation, yet remains insufficient despite its recognised importance (Enrici & Hubacek, 2018). Nerlich *et al*. (2010) argue that climate change policy communication is crucial for public discourse. Effective engagement requires raising awareness, educating on policy adoption, and ensuring community involvement. The 2000 Ontario Conference outlined key communication principles: clear goals, audience identification, informed communicators, partnerships, two-way dialogue, and risk communication (Andrey & Mortsch, 2000). Improved multi-level governance and diverse communication channels reports, workshops, and online databases are vital (Wertz-Kanounnikoff & Angelsen, 2009; Park *et al*., 2013).

Limited access to climate change policy communication, particularly among smallholder farmers, results from academic jargon, inadequate advocacy, and insufficient political-social support (Park *et al*., 2013). Angelsen (2009) stresses the need for targeted communication strategies, trained personnel, partnerships, and risk awareness to improve policy adoption. Kenya has made progress in climate change readiness, but centralised stakeholder meetings limit participation. Government-controlled discussions exclude critics, and climate policy knowledge remains confined to officials, NGOs, and academics. Local awareness is minimal, with little investment in grassroots capacity-building or an online dissemination platform (Standing & Gachanja, 2014).

Community adaption activities resulting from climate change policy communication

Ng *et al*. (2014) found that diverse communication approaches are necessary to engage stakeholders with varying technical awareness, preferences, and influence. Research shows that stakeholder participation enhances climate change policy implementation by providing a broader platform for interested parties and ensuring equitable decision-making, improving responses to climate change and sustainable resource management. At the national level, stakeholder involvement grants affected groups access to decision-making, fosters fair benefit-sharing systems, and mitigates corruption and conflicts. A study in the Democratic Republic of the Congo highlighted the importance of broad stakeholder input in policy communication. However, challenges persist, as different stakeholders have conflicting interests. In Vietnam, centralised decision-making limits stakeholder input, illustrating the need to address power structures in climate change policy discussions (Daviet *et al*., 2011).

CONCLUSION

Climate change policies and legislation are communicated to smallholder farmers in Tigithi ward, Laikipia County, through government extension services (chief barazas), agricultural cooperatives, NGOs, community-based organizations, radio broadcasts, and mobile phone technologies. Extension workers play a crucial role in disseminating information on adaptation practices, policy incentives, and support programs. Effective communication strategies tailor messaging to farmers' specific contexts, using simplified language, visual aids, and locally relevant examples. Prioritizing local languages and cultural norms enhances engagement, while integrating indigenous knowledge fosters trust and ownership of adaptation initiatives. Participatory approaches, such as farmer field schools, participatory videos, and community forums, encourage co-design and implementation of adaptation strategies. Interactive communication methods facilitate experiential learning and problem-solving among farmers.

Capacity-building initiatives equip smallholder farmers with knowledge and skills in climate-smart agriculture, water management, soil conservation, and alternative livelihoods. Improved access to climate information services and resilient technologies supports informed decision-making. Mobile platforms, weather advisories, and digital extension tools bridge information gaps and enable real-time farmer-expert communication. Collaboration between government agencies, NGOs, research institutions, and the private sector strengthens policy implementation. Integrating climate considerations into agricultural and rural development policies ensures synergy and prevents conflicts. Continuous monitoring, feedback loops, and participatory assessments refine communication strategies and policy effectiveness over time.

RECOMMENDATIONS

The communication of climate change policies to smallholder farmers should be a continuous process, making use of government extension services, agricultural cooperatives, NGOs, community-based organizations, radio broadcasts, and mobile phone technologies. To strengthen this process, both the National and County Governments need to deploy more extension officers, as they play a crucial role in conveying climate change policies and adaptation mechanisms. For greater effectiveness, communication should rely on tailor-made messages presented in simplified language, supported by visual aids and locally relevant examples. Participatory approaches such as farmer field schools, participatory videos, and community forums are also vital, as they encourage co-design and joint implementation of adaptation strategies. In addition, capacity building and training on climate change and adaptation should be intentional and sustained, implemented through collaborative approaches that empower farmers over time.

ACKNOWLEDGEMENT

I am sincerely thankful to my supervisors; Prof. Silas Odongo Oriaso, Prof. George Odera Outa and Prof. Alfred Owuor Opere for their helpful insights throughout this study. Their expertise and constructive criticism have enhanced this research paper's quality and credibility. I am also

grateful to the Department of Agriculture and Climate change at the Laikipia County Government for providing important background information and linkage with the farmers. Finally, I extend my sincere appreciation to the Institute of Climate Change and Adaptation (ICCA) at the University of Nairobi for providing relevant resources and supportive research environment.

Ps: As this study is part of my PhD thesis, which covers one of the four objectives in the study, it is possible that part of the information is available online as part of the study covering other objectives has already been published.

REFERENCES

Alkire, H. (2017). Multidimensional Poverty in Sub-Saharan Africa. Poverty Reduction in the Course of African Development, 102. http://dx.doi.org/10.1093/acprof:oso/9780198797692.003.0005

Abdi and cord aid (2011): Technicalbrief; community managed disaster risk reduction (CMDRR); cord aids strategy for building resilience communities in dry lands areas of east and the horn of Africa. https://www.disasterriskreduction.net/east-central%20Africa/reglap%2020-08-2015,%204.45pm

Adhikari, B. (2009). Reduced emissions from deforestation and degradation: Some issues and considerations. Journal of Forest and Livelihood, 8(1), 14–24. https://www.forestaction.org/app/webroot/vendor/tinymce/editor/plugins/filemanager/files/images/stories/pdfs/journal_of_forest_and_livelihood/vol_8_1/2__adhikari.pdf

Agarwal, B. (2001). Participatory exclusions, community forestry, and gender: An analysis for South Asia and a conceptual framework. World development, 29(10), 1623-1648. https://doi.org/10.1016/s0305-750x(01)00066-3

Allen, T. J., Lee, D. M., & Tushman, M. L. (1980). R&D performance as a function of internal communication, project management, and the nature of the work. IEEE Transactions on Engineering Management, 1, 2–12. https://doi.org/10.1109/tem.1980.6447372

Angelsen, A. (2009). Realizing REDD+: National strategy and policy options. Cifor. http://dx.doi.org/10.17528/cifor/002871

Aquino, A., & Guay, B. (2013). Implementing REDD+ in the Democratic Republic of Congo: An analysis of the emerging national REDD+ governance structure. Forest Policy and Economics, 36, 71-79. https://doi.org/10.1016/j.forpol.2013.04.003

Awung, N. S. (2015). Assessing community involvement in the design, implementation, and monitoring of REDD+ projects: A case study of Mount Cameroon National Park-Cameroon. https://etheses.whiterose.ac.uk/id/oai_id/oai:etheses.whiterose.ac.uk:11152

Aboud, A. A. (1982): Range management extension services on pastoral societies of Kenya, Msc. Thesis, Ohio State, University, and Columbus, Ohio, USA. (Unpublished). https://doi.org/10.1080/08941928909380695

Adger, (2003): Social capital, collective action, and adaptation to climate change; Economic and geography 79(4):387–404 https://www.jstor.org/stable/30032945 04 -02-2017-8.30

Ahmed, A. G. M. and Abdel, A .H. (1996): Managing scarcity: Human adaptation inEast African Dry lands. Addis Ababa. https://doi.org/10.1111/j.1467-7717.2009.01094.x

Agrawal, A. (2007): Forests, governance, and sustainability: common property theory and its contributions. International Journal of the Commons 1:111-136. https://www.thecommonsjournal.org/articles/10.18352/ijc

Balan, K. S., & Norman, S. J. (2012). Community radio (CR)—Participatory communication tool for rural women development—A study. International Research Journal of Social Sciences, 1(1), 19-22. https://www.researchgate.net/publication/330169352_community_radio_a_participatory_communication_tool_for_strengthening_agriculture_extension

Bessette, G. (2006). "Facilitating dialogue, learning and participation in natural resourcesmanagement," in Guy Bessette (ed.), People, Land and Water. Participatory Development Communication for Natural Resource Management, London, Earthscan. https://www.fao.org/4/a1476e/a1476e03.pdf

Bourne, L. (2016). Targeted communication: The key to effective stakeholder engagement. Procedia-Social and Behavioral Sciences, 226, 431–438. http://dx.doi.org/10.1016/j.sbspro.2016.06.208

Boutthavong, S., Hyakumura, K., & Ehara, M. (2017). Stakeholder participation in REDD+ readiness activities for three collaborative projects in Lao PDR. Forests, 8(5), 150. http://dx.doi.org/10.3390/f8050150

Brockhaus, M., Di Gregorio, M., & Carmenta, R. (2014). REDD+ policy networks: exploring actors and power structures in an emerging policy domain. Ecology and Society, 19(4). http://dx.doi.org/10.5751/es-07098-190429

Connolly, S. (2016). Climate change, food security, and livelihoods in sub- Saharan Africa. Regional Environmental Change, 16(2), 385-399. http://dx.doi.org/10.1007/s10113-015-0761-x

Coulibaly, C. &. (2017). International financial spillovers to emerging market economies: How important are economic fundamentals?. Journal of International Money and Finance, 76, 133-152. https://doi.org/10.1016/j.jimonfin.2017.05.001

Chong, M. (2007). The role of internal communication and training in infusing corporate values and delivering brand promise: Singapore Airlines' experience. Corporate Reputation Review, 10(3), 201–212. http://dx.doi.org/10.1057/palgrave.crr.1550051

Clutterbuck, D. (2001). Communication competence and business success. International Association of Business Communications. https://books.google.com/books/about/communication_competence_and_business_su.html?id=udw4aaaacaaj

Čulo, K., & Skendrović, V. (2010). Communication management is critical for project success. Informatologia, 43(3), 228–235. https://hrcak.srce.hr/file/89183

Doss, C. (2014). If women hold up half the sky, how much of the world's food do they produce?. In Gender in agriculture (pp. 69-88). Springer, Dordrecht. http://dx.doi.org/10.1007/978-94-017-8616-4_4

Daviet, F., Mabel, M., & Halverson, E. (2011). A draft framework for sharing approaches for better multi-stakeholder participation practices. Forest Carbon Partnership Facility and UN-REDD Programme. https://www.undp.org/publications/draft-framework-sharing-approaches-better-multi-stakeholder-participation-practices

Dow, W., & Taylor, B. (2010). Project management communications bible (Vol. 574). John Wiley & Sons. https://books.google.com/books/about/project_management_communications_bible.html?id=nbwyxv5zkt4c

Drinkwater, A. (2007). Communication: The Life Blood of a Project. Retrieved From https://www.projectsmart.co.uk/communications-management/communication-the-lifeblood-of-a-project.php

DSE (2005), Effective Engagement: Building Relationships with Community and other Stakeholders: An Introduction to Engagement, Department of Sustainability and Environment, Melbourne. https://sustainingcommunity.wordpress.com/2018/05/14/effective-engagement/

El-Saboni, M., Aouad, G., & Sabouni, A. (2009). Electronic communication systems effects on the success of construction projects in the United Arab Emirates. Advanced Engineering Informatics, 23(1), 130–138. http://dx.doi.org/10.1016/j.aei.2008.07.005

Ferrari, C. A. (2010). Communicating Climate Change, REDD, and Political Ecology: A global land question and prospects for agroecology. 4–7. https://consensus.app/papers/communicating-climate-change-redd-and-political-ecology-a-ferrari/a809a4303527522ebf7ff863862400ab/

Guide, P. (2000). Project management body of knowledge. Project Management Institute. 5a Edição. Versão Em Português. https://pt.scribd.com/document/178186282/project-management-body-of-knowledge-pmbok

GOK (2018). National Climate Change Action Plan 2018-2022. Published by the Ministry of Environment and Mineral Resources, Nairobi, Kenya. https://rise.esmap.org/data/files/library/kenya/clean%20cooking/kenya_nccap_2018-2022.pdf

GOK (2015). National Climate Change Response Strategy. Published by the Government Press, Nairobi, Kenya. https://cdkn.org/sites/default/files/files/national_climate_change_response_strategy_executive_brief.pdf

Government of Kenya (2018). Sector Plan for the Blue Economy. Kenya Vision 2030. https://www.planning.go.ke/kenya-vision-2030/

Government of Kenya (2018). Sector Plan for the Blue Economy. Kenya Vision 2030, page 19.107 IMO (2014). https://vision2030.go.ke/wp-content/uploads/2018/09/kenya-vision-2030-sector-progress-project-updates-june-2018.pdf

GoK. (2006): Farm management hand book of Kenya, volume 11, Eastern Kenya: Ministry of agriculture, Kenya; in cooperation with the Germany agency for technical cooperation (GTZ). https://www.2.gtz.de/dokumente/bib/07-1286.pdf

GoK. (2010a): Government of Kenya: TheConstitution of Kenya 2010, Published by the National Council for Law Reporting with the Authority of the Attorney Gener. https://www.parliament.go.ke/sites/default/files/2017-05/the_constitution_of_kenya_2010.pdf

GoK. (2010b): Government of Kenya:The 2009 Kenya population and housing census .Kenya National Bureau of Statistics (KNBS). Government Printer, Nairobi, Kenya. https://www.knbs.or.ke/wp-content/uploads/2023/09/2009-kenya-population-and-housing-census-analytical-report-on-kenya-population-atlas.pdf

GoK. (2015): Government of Kenya: Addressing Climate Change: Success Stories from Kenya, Ministry of Environment, Natural Resources and Regional Development. https://unfccc.int/sites/default/files/resource/kennc2.pdf

Hansen. (2012). Knowledge networks: Explaining effective knowledge sharing in multiunit companies. Organization science, 13(3), 232-248. http://dx.doi.org/10.1287/orsc.13.3.232.2771

Harrington, H. J., & McNellis, T. (2006). Project management excellence: The art of excelling in project management (Vol. 2). Paton Professional. https://books.google.com/books/about/resource_management_excellence.html?id=tpqsjc7sxxwc

Harvey, B. (2011). Climate airwaves: Community radio, action research and advocacy for climate justice in Ghana. International Journal of Communication, 5, 24. https://ijoc.org/index.php/ijoc/article/view/1364

Hoffmann, W. H., & Schlosser, R. (2001). Success factors of strategic alliances in small and medium-sized enterprises—An empirical survey. Long Range Planning, 34(3), 357–381. https://doi.org/10.1016/s0024-6301(01)00041-3

Iheoma, C. (2014). Impact of Climate Change on Agricultural Production and Sustainability in Nigeria. Asian Journal of Agricultural Extension, Economics & Sociology 4(1): 29-41, 2015. http://dx.doi.org/10.9734/ajaees/2015/11518

Isbell, F. (2012). Causes and consequences of biodiversity declines. Nat. Edu. Knowledge 3:54. Kenya National Adaptation Plan: 2015-2030, Government of Kenya, July 2016. https://www.kenyaclimatedirectory.org/resources/64f24048e233e

Lyster, R. (2011). REDD+, transparency, participation, and resource rights: the role of law. Environmental science & policy, 14(2), 118-126. https://doi.org/10.1016/j.envsci.2010.11.008

Lamboll, R. S. (2017). Climate change and agricultural systems. In Agricultural Systems (pp. 441-490). Academic Press. http://dx.doi.org/10.1016/b978-0-12-802070-8.00013-x

Lowder, S. K. (2016). The number, size, and distribution of farms, smallholder farms, and family farms worldwide. World Development, 87, 16-29. https://doi.org/10.1016/j.worlddev.2015.10.041

Massetti, E. M. (2011). The impact of climate change on US agriculture: a repeated cross-sectional Ricardian analysis, in: Dinar, A., Mendelsohn, R. (Eds.), Handbook on Climate Change and Agriculture. Edward Elgar, Cheltenham, UK, Northampton, MA, USA. http://dx.doi.org/10.1080/19390450802495882

Mudombi, S. &. (2014). Access to weather forecasting and early warning information by communal farmers in Seke and Murewa districts, Zimbabwe. Journal of Human Ecology, 48(3), 357-366. http://dx.doi.org/10.1080/09709274.2014.11906805

Macchi, M., Oviedo, G., Gotheil, S., Cross, K., Boedhihartono, A., Wolfangel, C., & Howell, M. (2008). Indigenous and traditional peoples and climate change: Issues Paper. https://cmsdata.iucn.org/downloads/indigenous_peoples_climate_change.pdf

McKinney, M., & Harmon, W. (2007). Governing nature, governing ourselves: engaging citizens in natural resource decisions, Part 1. International Journal of Public Participation, 1(2), 1-16. https://www.espa.ac.uk/files/espa/governance%20espa%20policy%20brief_final%20web%20%281%29.pdf

Mehra, S. (2009). Project communication management. Available online at Http://Www. Scribd. Com/Doc/7875707/Project Communication summaryby Sachin Mehra. http://dx.doi.org/10.1007/978-1-4842-3664-2_9

Milbank, C., Coomes, D., & Vira, B. (2018). Assessing the progress of REDD+ projects towards the sustainable development goals. Forests, 9(10), 589. https://www.mdpi.com/1999-4907/9/10/589/htm

Miller, D. C., & Salkind, N. J. (2002). Handbook of research design and social measurement. Sage. https://doi.org/10.4135/9781412984386

Moser, S. C. (2017). Communicating climate change adaptation and resilience. In Oxford Research Encyclopedia of Climate Science. https://www.oxfordreference.com/display/10.1093/acref/9780190498986.001.0001/acref-9780190498986-e-436

Moser, S. C., & Dilling, L. (Eds.). (2007). Creating a climate for change: Communicating climate change and facilitating social change. Cambridge University Press. http://dx.doi.org/10.1093/oxfordhb/9780199566600.003.0011

Mugenda, O., & Mugenda, A. (2003). Research methods: Quantitative and Qualitative methods. Revised in Nairobi, 56(12), 23–34. https://books.google.com/books/about/research_methods.html?id=4wyraaaacaaj

Muszyńska, K. (2017). Communication needs in an international project team in the opinion of the practitioners. Ekonomiczne Problem Usług, 126(1/1), 233–241. http://dx.doi.org/10.18276/epu.2017.126/1-24

Oyekale. (2015). Assessment of Malawian mothers' malaria knowledge, healthcare preferences and timeliness of seeking fever treatments for children under five. International journal ofenvironmental research and public health, 12(1), 521-540. https://doi.org/10.3390/ijerph120100521

Park, M. S., Choi, E. S., &Young, Y.-C. (2013). REDD+ as an international cooperation strategy under the global climate change regime. Forest Science and Technology, 9(4), 213–224. http://dx.doi.org/10.1596/16221

Parry, M., Parry, M. L., Canziani, O., Palutikof, J., Van der Linden, P., & Hanson, C. (2007). Climate change 2007-impacts, adaptation, and vulnerability: Working group II contribution to the fourth assessment report of the IPCC (Vol. 4). Cambridge University Press. https://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4_wg2_full_report.pdf

Pivec, M., & Maček, A. (2019). Employment background influence on social media usage in the field of European project management and communication. Journal of Business Research, 94, 280–289. https://doi.org/10.1016/j.jbusres.2018.03.021

Phiiri, G. K. (2016). Climate change and agriculture nexus in Sub-Saharan Africa: the agonizing reality for smallholder farmers. International Journal of Current Research and Review, 8(2), 57. http://repository.ruforum.org/system/tdf/kanyama-phiiri%20et%20al%202016.pdf?file=1&type=node&id=35907

Polsky, C. (2004). "Putting Space and Time in Ricardian Climate Change Impact Studies: Agriculture in the US Great Plains, 1969–1992."Annals of the Association of American Geographers 94(3): 549- 564. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-8306.2004.00413.x

Polsky. (2001). Adaptation to Climate Variability and Change in the US Great Plains: A Multi-scale Analysis of Ricardian Climate Sensitivities."Agriculture, Ecosystem and Environment 85(3): 133-144. http://dx.doi.org/10.1016/s0167-8809(01)00180-3

Ringler, C. Z. (2010). Climate change impacts on food security in sub-Saharan Africa. Insights from Comprehensive Climate Change Scenarios. https://www.researchgate.net/publication/237137914_climate_change_impacts_on_food_security_in_sub-saharan_africa_insights_from_comprehensive_climate_change_scenarios

Remidez, H., & Jones, N. B. (2012). Developing a model for social media in project management communications. International Journal of Business and Social Science, 3(3). https://ijbssnet.com/journals/vol_3_no_3_february_2012/3.pdf

Resosudarmo, I. A. P., Duchelle, A. E., Ekaputri, A. D., & Sunderlin, W. D. (2012). Local hopes and worries about REDD+ projects. Analyzing REDD+, 193. https://cgspace.cgiar.org/items/9d70c9d8-dab0-4fe9-82f8-556104d13d05

Rogers, E. (2003). Diffusion of innovations, 5th edition Tampa. FL: Free Press.[Google Scholar], 2(12), 14–45. http://dx.doi.org/10.1016/j.jmig.2007.07.001

Rogers, E. M., & Shoemaker, F. F. (1971). Communication of Innovations; A Cross-Cultural Approach. https://books.google.com/books/about/communication_of_innovations.html?id=6lk9aaaaiaaj

Serra, R. &. (2016). Climate information services and behavioral change: The case of Senegal (No. 010). Sahel Research Group Working Paper. https://sahelresearch.africa.ufl.edu/publications/

Settele, J. S. (2015). Terrestrial and inland water systems. In Climate change 2014 impacts, adaptation and vulnerability: Part A: Global and sectoral aspects (pp. 271-360). Cambridge University Press. http://dx.doi.org/10.1017/cbo9781107415379.009

Schäfer, M. S. (2012). Online communication on climate change and climate politics: A literature review. Wiley Interdisciplinary Reviews: Climate Change, 3(6), 527–543. http://dx.doi.org/10.1002/wcc.191

Servaes, J., & Malikhao, P. (2005). Participatory communication: The new paradigm. Media & Global Change. Rethinking Communication for Development, 91–103. https://biblioteca.clacso.edu.ar/clacso/coediciones/20100824064944/09chapter5.pdf

Sharma, G. (2017). Pros and cons of different sampling techniques. International Journal of Applied Research, 3(7), 749–752. https://www.allresearchjournal.com/archives/?year=2017&vol=3&issue=7&part=k&articleid=4130

Standing, A., & Gachanja, M. (2014). The political economy of REDD+ in Kenya: Identifying and responding to corruption challenges. U4 Issue. https://scispace.com/papers/the-political-economy-of-redd-in-kenya-identifying-and-1achwpv2o6

Stead, K., Kumar, S., Schultz, T. J., Tiver, S., Pirone, C. J., Adams, R. J., & Wareham, C. A. (2009). Teams communicating through STEPPS. Medical Journal of Australia, 190(S11), S128–S132. http://dx.doi.org/10.5694/j.1326-5377.2009.tb02619.x

Sutanapong, C., & Louangrath, P. (2015). Descriptive and inferential statistics. International Journal of Research & Methodology in Social Science, 1(1), 22–35. http://dx.doi.org/10.1007/978-3-030-45799-0_2

Unfccc, U. (1992). United Nations Framework Convention on Climate Change. Convention on climate change. UNFCCC. Forest Science. https://unfccc.int/resource/docs/convkp/conveng.pdf

Van Passel, M. E. (2012). A Ricardian analysis of the impact of climate change on European agriculture. FEEM nota di lavoro, 83/2012. http://www.oecd.org/tad/crp/van_passel_workingpaper_ricardian Analysis.pdf

Vera, T. S. (2017). Understanding the factors affecting adoption of subpackages of CSA in Southern Malawi. https://www.internationalscholarsjournals.com/articles/understanding-the-factors-affecting-adoption-of-subpackages-of-csa-in-southern-malawi.pdf

Weaver, P. (2007). Getting the "soft stuff" right–effective communication is the key to successful project outcomes. PMI Global Congress (North America). https://www.mosaicprojects.com.au/pdf_papers/p055_getting_the_soft_stuff_right.pdf

Wertz-Kanounnikoff, S., & Angelsen, A. (2009). Introduction: Realizing REDD+: National strategy and policy options. https://www.cifor-icraf.org/publications/pdf_files/books/bangelsen0902.pdf

Wibowo, L. R., Race, D., & Curtis, A. (2013). Communicating REDD+ issues at the local level: Creating latent and manifest conflict. Indonesian Journal of Forestry Research, 10(2), 67–78. https://xjournals.com/collections/articles/article?qt=lxhipcjzeol/rf0pz4m3xjdi1fidztxdercgbkqpf/b6o8yti4mwbdz+bfbgi5wb

World Meteorological Organization. Secretariat. (1979). Proceedings of the World Climate Conference-a Conference of Experts on Climate and Mankind. https://library.wmo.int/records/item/35903-proceedings-of-the-world-climate-conference-a-

Yamane, T. (1967). Statistics: An introductory analysis. https://books.google.com/books/about/statistics.html?id=wr7raaaamaaj

Yin, R. K. (1994). Discovering the future of the case study. Method in evaluation research. Evaluation Practice, 15(3), 283–290. https://doi.org/10.1016/0886-1633(94)90023-x

Zulch, B. (2014). Communication: The foundation of project management. Procedia Technology, 16, 1000–1009. https://doi.org/10.1016/j.protcy.2014.10.054

Zulch, B. (2016). A proposed model for construction project management communication in the South African construction industry. Acta Structilia: Journal for the Physical and Development Sciences, 23(1), 1–35. http://dx.doi.org/10.18820/24150487/as23i1.1