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Introduction

The World Meteorological Organization, the Global Framework for Climate Services and the 6th Assessment Report by the International Panel for Climate Change highlight the importance of climate information in reducing climate risk and supporting adaptation. These organizations recommend more investment in and development of climate information systems (CIS) to support vulnerable users, such as pastoralists, in making decisions concerning adaptation. Nevertheless, scholars have observed that pastoralists' uptake of CIS is low and that there is a gap between climate information producers and climate information users.

Some scholars argue that climate forecasts are not sufficiently precise because there is a lack of historical climate data, especially in Africa, and that good modelling therefore is not possible. Other scholars argue that the climate information provided is not sufficiently relevant for the end users. They explain this by referring to CIS as implemented mainly in a top-down manner and does not encompass information relevant for pastoralists, such as locations with pasture availability, possible migration routes, and possible conflict areas.

According to the Cancun Framework for Adaptation and the Paris Agreement, Non-Governmental Organizations (NGOs) and participatory climate scenario planning should play a central role in CIS. The Kenyan climate law attaches a similar important role for NGOs as actors and intermediaries in supporting CIS and adaptation.

The current policy brief looks at the role NGOs have played as CIS intermediaries in Samburu County, Kenya, and discusses to what extent NGOs are able to close the information gap between producers and end-user pastoralists, by ensuring that climate information is timely and relevant to pastoralists' adaptation.

The role of NGOs in CIS

Samburu is one of 42 counties in Kenya. In 2019, the county government commenced a three-year project in collaboration with a number of NGOs to implement CIS in Samburu. The project was part of a broader climate governance project aiming at equipping local communities with relevant climate information and thereby assist them in adapting to the climate changes, such as erratic floods and drought. The project included a focus on the climate information needs of women and youth.

The Roles of NGOs in Climate Information Services (CIS) in Samburu County

- **Fund-raising and Networking:** Engaging with Development Partners, International NGOs, and governments to secure resources for CIS implementation.
- **Packaging Climate Predictions:** Translating meteorological forecasts into usable forms for targeted end-users.
- Dissemination Workshops: Organizing workshops to disseminate climate advisories to pastoralists.
- Coordination: Coordinating climate scouts to collect local climate predictions and disseminate CIS information.
- Mapping Indigenous Climate Knowledge: Identifying custodians of indigenous knowledge for participatory climate scenario workshops.
- **Documentation:** Mapping and documenting indigenous climate knowledge.

According to the project document and key informant interviews, three main NGO types were involved in the

CIS project. They worked together in a consortium, and had monthly discussions with government agencies on climate forecasts and the implications of these forecasts to pastoralists' livelihoods.

The NGOs had different tasks. The International NGO (INGO) with its rich network led fundraising and capacity building. Also, the INGO worked with the national NGOs in identifying different locations, including Samburu County, for CIS implementation.

The national NGO's role was to build and maintain national and local networks for CIS implementation. This included collecting scientific climate predictions and networking with government agencies and ministries to facilitate CIS dissemination.

The local NGOs and community-based organizations (CBOs) had the duty of mapping indigenous climate knowledge and collecting local predictions. The local NGOs and CBOs also documented indigenous climate knowledge as part of climate research. According to the local NGOs and CBOs, having the custodians of local knowledge attend CIS implementation meetings improved the process of dissemination.

Some of the NGO project staff encountered challenges in implementing CIS, such as having limited knowledge of climate predictions and how to handle the divergence between scientific and local predictions. This staff indicated that they side with the scientific climate information when there are divergences with local knowledge.

In summary, the project document and the NGO informants consider their role as that of intermediaries between producers and end users disseminating climate information, documenting local knowledge, and communicating pastoralists' climate information needs.

Pastoralists' views on CIS and NGO intermediaries

Overall, pastoralists' perceptions of CIS and NGO intermediaries are mixed. The perceptions can be summarised into three categories: (i) CIS misguides pastoralists, (ii) CIS is not so useful, (iii) CIS is important and informative.

Some pastoralists, especially the elderly age sets, who have knowledge about and experience in indigenous prediction, listen to CIS predictions, but remain sceptical. They point to lack of precision in CIS predictions, or view CIS promoters and intermediaries as misguiding or misleading. The elderly age sets also tends to question the rationale of advice from the NGOs, such as the advice to reduce the size of their herds although recurrent droughts already had diminished them.

Specifically, the elders tend to trust indigenous climate knowledge more. In Samburu, customs and norms have evolved over time, and the elders enlist several methods for predicting the weather. These methods include animal behaviour like cows licking each other's hooves, flowers blooming, bird migration patterns, and the constellation of the stars.

Pastoralists who view CIS as "not so useful" in aiding adaptation practices believe that useful climate information should include climate predictions alongside information on potential conflict areas, and locations with pastures and water. They further suggest that CIS and NGO intermediaries need a communication channel where they can report on actual weather.



Picture demonstrating flowers blooming as a weather prediction method. Lodekejek, Samburu. 11/06/2021, Alphonce Mollo.

Finally, some pastoralists perceive of CIS and NGO intermediaries as important and innovative. These pastoralists praise CIS dissemination for being useful by promoting alternative livelihood sources and they acknowledge that NGOs try new ways of educating communities by bringing diverse groups together to share experiences.

Additional observations

The introduction of CIS presents a new dilemma for pastoralists, who must choose between scientific predictions and indigenous knowledge or integrate both. The choice between CIS and traditional climate knowledge creates tension between the two sources of information and complicates pastoralists' adaptation-related decision-making.

Implementing CIS in a top-down manner without the possibility for the pastoralists to communicate their observations and needs for climate information upwards in the system impedes the uptake of CIS. Having a "feedback loop" would enable pastoralists to communicate their needs back into the CIS system, which could then design its dissemination according to pastoralists' needs. Moreover, it would serve to legitimize the information provided by CIS.

Some of the youths in Samburu use mobile phones to access CIS. They believe that mobile phones and the local radio station, Serian, are good at disseminating climate information and that local radio stations and mobile phones could be a platform not only to issue information on climate, conflict, water, and pasture availability but also to provide the missing feedback loop.

CIS implementation in Samburu provided a platform for elderly men to show case their prowess in indigenous knowledge. This excluded women from communicating their lived experiences on weather and climate. CIS implementation hence had the unintended consequence of enforcing gender and age imbalances.



Key takeaways

- CIS presents a new dilemma for pastoralists' decision making
- There is a deficit in a feedback loop in CIS.
- The youth has agency in the uptake of CIS.
- CIS does not benefit women

Policy recommendations

- Embed indigenous climate knowledge in CIS. Implementation of CIS needs to be done in a way that respects the knowledge and the capacity of the pastoralists. Indigenous Knowledge is used by the community to triangulate the prediction by CIS, and this must be taken into consideration when designing and implementing CIS.
- Enhance CIS feedback loop through mobile phones and radio.

Communicating pastoralists' needs up the system is important in bridging the CIS user and producer gap. Technologies such as community radios and mobile phones can help collect voices from the community.

- Encourage uptake of CIS using young pastoralists. Young pastoralists are adopting new ways of climate information dissemination using cell phones and delivering the information to their families. Through the agency of the young pastoralists, the use of mobile phones has potential to close the climate information gap.
- Leverage women's voices in CIS.

The lack of women's participation in CIS dissemination platforms raises concerns about marginalization and reinforcement of power imbalances. Women's perspective on their lived weather and climate is critical in designing and enabling CIS uptake.

