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Submitting Author	<i>Dr. Julie L. Snorek</i>
Position	<i>Research Scientist</i>
Department, Institution	<i>The Humanitarian Response and Development Lab (HURDL) at Clark University</i>
Address	<i>16 Claremont Street, Worcester, MA 01610-1477</i>
Country	<i>United States of America</i>
Email	<a href="mailto:jsnorek@clarku.edu">jsnorek@clarku.edu</a>
Phone	<i>+1 6038923496</i>
Gender	<i>female</i>

**The gendered patterns of climate information service use in Africa**

Julie Snorek<sup>1</sup>, Sheila Onzere<sup>2</sup>, Helen Rosko<sup>3</sup>, and Edward Carr<sup>4</sup>

<sup>1-4</sup> *Humanitarian Response and Development Lab (HURDL) at Clark University*

[jsnorek@clarku.edu](mailto:jsnorek@clarku.edu), [sonzere@clarku.edu](mailto:sonzere@clarku.edu), [hrosko@clarku.edu](mailto:hrosko@clarku.edu), and [edcarr@clarku.edu](mailto:edcarr@clarku.edu)

**Short Abstract**

Climate information services (CIS) are increasingly viewed as a means to achieve greater resilience to climate hazards. However, the architecture of CIS is not always sensitive to the needs of all of its users. To understand better how to engage users through CIS requires an approach that highlights decision-making processes relevant to both the material and non-material elements of one's livelihood. This research, as part of the wider USAID-funded Climate Information Services Research Initiative (CISRI) uses the Livelihoods as Intimate Government (Carr 2014) framework to understand the more non-material processes relevant to livelihood decision-making. Through this approach, we were able to identify gendered patterns of climate information services in Sub-Saharan Africa and uncover how one's gender identity impacts one's modes of agricultural production, access to land, information, and capital, thus highlighting how certain users may be limited or excluded from CIS. The results of this work include recommendations on how to best refine systems of monitoring and evaluation of CIS programs in Africa.

**Keywords:** climate information services (CIS), livelihoods, gender identity, monitoring and evaluation

**1. Introduction**

This research is a part of the Climate Information Services Research Initiative (CISRI), a project funded by USAID that both addresses critical questions in contemporary climate services practice in Africa, while also establishing a learning agenda to organize and prioritize future research efforts in this field. Current focal areas for the project include the monitoring and evaluation of CIS, better identifying CIS users and their needs, and

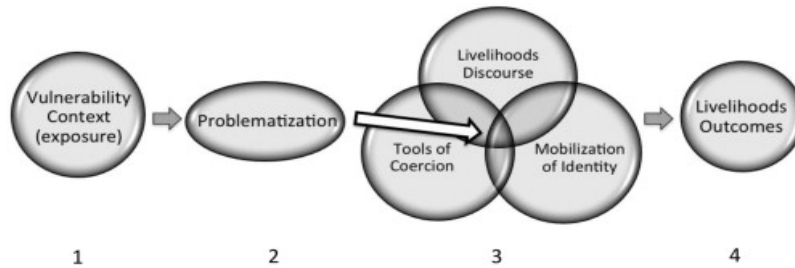
mapping CIS to better understand how climate information is turned into a service and delivered to users. The project adds depth and insight to current empirical research in each of these focal areas through multiple case studies of ongoing CIS, thus offering the opportunity to not only research CIS practice, but also inform such practice such that ongoing efforts to upscale CIS programming in sub-Saharan Africa meet their goals. Actors within the CISRI consortium include: Mercy Corps (project lead), Catholic Relief Services, Humanitarian Response and Development Lab (HURDL), the International Research institute for Climate and Society, Earth Institute, Columbia University (IRI), Practical Action Consulting (PA), and The World Agroforestry Centre (ICRAF). The research findings presented here focus on CISRI's efforts to better monitor and evaluate CIS, and draw on quantitative and qualitative empirical research in Rwanda and Senegal and was managed by HURDL and ICRAF.

The impact of CIS on rural livelihoods is contingent on how the information delivered informs the activities of different individuals in user households and communities. Therefore, the study of CIS impact involves a detailed examination of the roles and responsibilities associated with different identity categories, including gender, and how they inform the division of labor within the household and community. In this sense, the study of CIS impacts requires a livelihoods analysis. However, while most livelihoods approaches frame decisions around the access and use of multiple forms of capital to achieve one's material livelihood goals (e.g. Chambers and Conway 1992; Ellis 2000; Scoones 2009). However, such approaches cannot fully explain why people choose to undertake the activities they do, and conduct those activities in the manner they do, such that they produce very regular and durable patterns of association between activities and identities, even when these patterns clearly privilege some members of the household and community over others. To address this shortcoming, HURDL employs a framework developed by the institution's founder called the Livelihoods as Intimate Governance (LIG) approach. This framework addresses the ways in which livelihoods function as efforts to govern an often-uncertain world, including the roles and responsibilities associated with different people occupying different identities (Carr 2013, 2014). Viewing livelihoods as efforts to set the world on a path, and aligning the efforts and interests of other members of the household and community with that path, explains a great deal about the regularity and durability of the patterns of activity, responsibility, and roles that shape how different people access information and act upon it in agricultural decisions.

## 2. Methods

The research was conducted in multiple phases during 2014, 2017, and 2018 in Rwanda and Senegal. Research teams, made up of male and female researchers from the respective countries received training in the LIG methodology and translated questionnaires into the local language relevant to each research site. Two sites in each country were selected based on the presence of CIS in the site, diversity of livelihood zones, and compatibility to our partner's (ICRAF) zones of quantitative data collection. The teams carried out between 44 and 90 interviews in each of the village sites, with a total of 134 interviews in Senegal and 180 in Rwanda. The LIG approach (Figure 1) begins with a literature review, which informs an initial understanding of the vulnerability context (Step 1, Figure 1), including how shocks and stressors impact each of these realms. This is then contextualized and tested through a series of interviews with community members to establish their sense of the vulnerability context. Within communities, perceptions of the vulnerability context vary in systematic ways reflecting the underlying logic of the government at the heart of livelihoods decision-making. Based upon their narratives of vulnerability, members of the community are assembled into groups with shared assemblages of vulnerability: shared understandings of the most important stressors they face. The research teams used both the literature reviews and the initial round of interviews to identify differences in the claims of each group, in other words, the contradictions between community and individual narratives of vulnerability, divergences in the claims of individuals in the same household, and differences in the claims of different individuals who appear to be of the same identity category (Figure 1, step 2) (Carr 2013). Such differences and contradictions provide a point of entry into the governing logic of livelihoods, which is explored in a second phase of research. Under LIG, livelihoods decisions take shape at the intersection of livelihoods discourses, mobilization of identity, and tools of coercion: that is, they are shaped by understandings of what an appropriate activity is, who is the right person to conduct that activity, and the ways in which deviation from these expectations might result in negative consequences. In the second phase of research, teams return to the same households to engage in longer, semi-structured interviews that explore this intersection (Step 3, Figure 1).

**Figure 1. The four steps in the LIG Framework.**



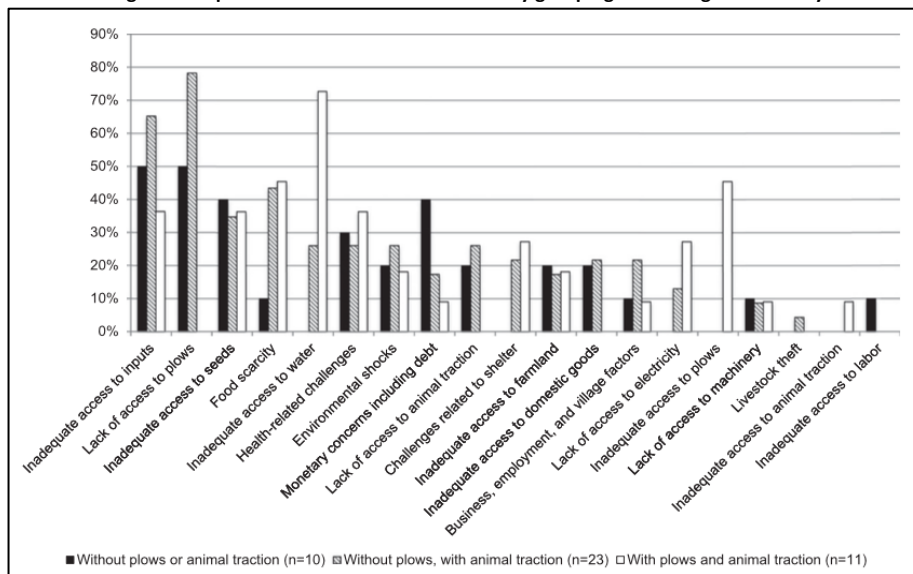
Participant observation is used to crosscheck the interview data. HURDL staff thereafter analyzed both phases of data through an iterative coding and analysis process, using the qualitative research platform MAXQDA. By taking a holistic livelihoods approach, the LIG approach has already demonstrated its efficacy in bringing forth different CIS user needs, even at the level of the household. Such studies (Carr, Onzere, et al. 2015; Carr and Owusu-Daaku 2016; Carr, Fleming, and Kalala 2016; Carr and Onzere 2017) demonstrate that CIS rarely benefit all equally in a given community, and have highlighted the centrality of gender to the production and maintenance of these unequal outcomes.

**3. Results and discussion**

(Please note: Data for 2017/2018 is currently being collected, coded, and analyzed and will be presented at the conference. Results presented in this extended abstract reflect only the research from 2014.)

In Senegal (2014), the data presented divergent perceptions of vulnerability, observed livelihood decisions, and livelihoods outcomes, highlighting the potential value of climate information services to various livelihood, age, and gender groupings. Because decision-making authority among the Wolof is shaped by seniority and gender, analysis disaggregated the different vulnerability groups to examine how the roles and responsibilities associated with identities that emerged at the intersection of seniority and gender produce different assemblages of vulnerability, patterns of activity, and livelihoods outcomes.

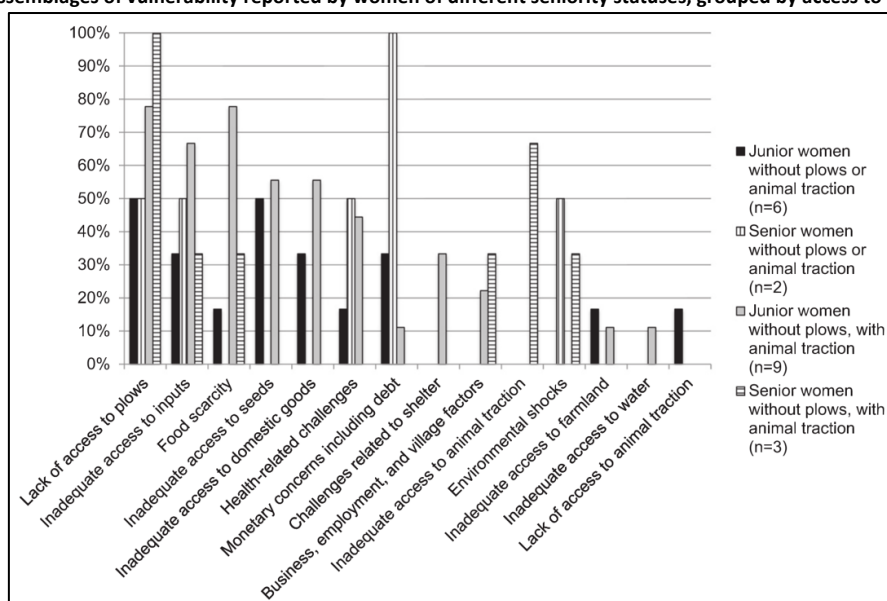
**Figure 2. Representations of three vulnerability groupings for Senegal case study**



For example, this study determined that the group with the highest levels of stress was that comprised of those who reported having no farming equipment or livestock (Figure 2). The responses from senior women, junior women, senior men, and junior men within each group were disaggregated to show distinct differences in how identity, and its associated roles and responsibilities, shaped differences in perception of vulnerability even within a group that shares a broad vulnerability profile. Then, when compared across groups, differences in the vulnerabilities of women depending on their seniority and the vulnerability group to which they belonged

emerged (Figure 3) These differences, however nuanced, speak to the different CIS needs of community members, needs that must be identified if they are to be addressed effectively.

Figure 3. The assemblages of vulnerability reported by women of different seniority statuses, grouped by access to livelihoods assets



#### 4. Conclusions

While past research has recognizes that gender shapes how CIS is received, utilized, and demanded (Hansen et al. 2011; Roncoli et al. 2011; Carr and Owusu-Daaku 2016), the CISRI work provides greater insight into both why these gendered patterns of behavior and outcome exist and what services might better serve multiple users' needs.

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