

The role of knowledge as a driver of cooperation:

Addressing resource conflict in the Tana
River County, Kenya



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Abstract

Resource conflicts are complex, and the drivers of cooperation and competition need to be considered within their particular context. Knowledge is believed to be a key driver of cooperation, yet little is understood about its role in this respect. For years the Tana River County has experienced conflict between herders and farmers over pasture and access to the river. In response to the conflict, two knowledge-based initiatives Tana FM and Una Hakika were established: the former a community radio, and the latter an SMS-based rumour verification service. Through working with these two organisations, this report explores the role knowledge plays as a driver of cooperation in the Tana River County. A Storylines framework is applied to understand the drivers of the conflict as defined by the actors in the conflict context, which incorporated the production of three radio programmes that were played on air as part of an innovative new research method. First, the drivers of the conflict were identified, fitting broadly into three themes: herders and farmers, tribalism, and rumours. Second, an investigation into the ways in which knowledge is utilised by Una Hakika and Tana FM was conducted. Finally, the roles which knowledge plays in relation to the drivers of the conflict were considered and discussed. The research finds that knowledge plays a role as a driver of cooperation primarily through advocacy, education, coverage and setting the discourse via a 'drip-drip' effect. Additionally, it works as a counter to misinformation by filling the 'information gap' and providing trusted information via the verification of rumours. Together, these roles impact the conflict through changing attitudes, and building a sense of community.

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1. Introduction

Resource conflict (violent or non-violent) refers to both competing claims over access to resources, and the way in which resources are used (Turner, 2004). The relationship between resource scarcity and competition/cooperation is highly debated in literature (Schmeier, 2010). One body of literature contends that land and water scarcity is a driver of competition, and will prove to be a central cause of conflict in the twenty-first century (Starr, 1991; Butts, 1997; Gleditsch, 1997; Gleick, 1998; Homer-Dixon, 1999). With arguments premised upon neorealist and Malthusian ideas, these authors foresee people becoming increasingly vulnerable due to growing populations and limited resources (Hensel et al., 2006). In regards to water resources, this vulnerability is particularly pertinent due to the upstream/downstream nature of rivers, which serves to create asymmetric power relations between water users due to their respective geographies (Selby, 2005). A second body of literature, however, puts forward the case that resource scarcity is more likely to be a driver of cooperation than competition. The notion of 'water wars' was critiqued for being highly speculative and based on little grounded evidence (Barnett, 2000). Wolf's (1998) study into historic water conflicts observed that the number of violent conflicts was greatly outweighed by the number of cooperatively managed water interactions, with no war over water having ever occurred. Further, the water-wars thesis overlooks externalities and benefit-sharing opportunities that can also be employed to encourage cooperative resource management (Sadoff et al., 2008).

Pointing to the drawbacks in a linear-causality approach to the resource scarcity-competition/cooperation relationship, a more nuanced view has emerged from the work of Barnett and Adger (2007), Eriksen and Lind (2009) and Buhaug et al., (2010). These authors argue that the relationship between conflict and resource scarcity is complex and needs to be considered within its particular context (Barnett et al., 2010). Mirumachi and Allan (2007) suggest that all resource management scenarios contain elements of both competition and cooperation, and to argue that resource scarcity drives one or the other is to provide a reductionist version of reality that simplifies the complexity of interactions. Further, Le Billon (2001) argues that the notion of 'natural resources' is a social construct. Referring to resources as scarce or abundant, then, becomes problematic in that these views are themselves subjective and open to interpretation. When looking at the relationship between resources and conflict it is therefore necessary to consider the various drivers within their broader institutional and social contexts in order to acquire a more holistic understanding of the resource-conflict situation (Bond, 2014).

To assess the competitive/cooperative state of a given resource management situation, Lindeman (2008) contends that four variables should be considered: power, interest, knowledge and contextual factors. Of the four, he notes that

knowledge is often overlooked and under-researched. In response to this, recent attention has been given to the role of knowledge in resource management (Pahl-Wostl et al., 2008; Berkes, 2009; Carr et al., 2012). As Garmendia and Stagl (2010) observe, making 'good' resource management decisions is difficult due to the high levels of uncertainty in the biophysical, political, social and economic processes and their interactions. Managing resources is information intensive because the knowledge required to address complex systems is usually fragmented and dispersed across different actors at a variety of scales (Carr et al., 2012). Coordinating between and drawing from these sources of knowledge can therefore enable a better understanding of the nature of the ecosystem complexity and uncertainty (Berkes, 2009). Lindemann (2008) argues that knowledge is therefore a key driver of cooperation in situations of resource conflict. He posits that 'social learning' is central to the production and diffusion of knowledge amongst stakeholders in order to facilitate cooperation in regards to resources. This exchange of information is contingent on existing channels of communication through which different actors can contribute. With the development of available technologies such as mobile phones and their SMS, radio and Internet capabilities, the avenues for knowledge production are increasing.

One channel of communication through which knowledge can be produced is community radio (Olorunnisola, 2002). According to Carroll and Hackett (2006), community radio functions as an alternative media to mainstream media outlets, with the ability to challenge hegemonic political and cultural discourses. Providing such a voice makes it a particularly potent vehicle for social change, as it can be accessed by the illiterate, enabling knowledge production amongst more vulnerable groups (Dahal, 2013). Ribot and Peluso (2003) contend that access to knowledge can determine who benefits from resources and who doesn't, and community radio can thus help bridge the gap between the "information rich and information poor" (Megwa, 2007:337). The introduction of information and communication technologies (ICTs) has created new opportunities for media. Phone call-ins, SMS and social media have enabled radio to move from a predominantly one-way directional information flow to a multidirectional participatory communication (Nassanga et al., 2012). In many cases this has greatly increased participation in knowledge production and local capacity building, creating social learning environments in which people can contribute to content and share viewpoints and information (Ranganathan and Sarin, 2012). There are still limitations, however as language barriers and lack of available technology can prevent participation – particularly in developing countries (Qureshi, 2011).

The role of knowledge as a driver of cooperation in a resource conflict situation is a nascent field in current research (Boyd et al., 2015). Some recent work has been applied to this variable in relation to resource dilemmas (Daniels et al., 2012;

Mandara et al., 2013; de Montalvo and Alaerts, 2013; Pfeiffer and Leentvaar, 2013; Irvine et al., 2016). All of these authors agree that whilst knowledge is a key driver of cooperation, the role it plays is relatively unclear. Furthermore, none of the aforementioned papers have discussed the role of knowledge as a driver for cooperation in situations of resource conflict.

This research seeks to fill this gap by exploring the different roles knowledge can play as a driver of cooperation. The research was conducted in the Tana River sub-county, Kenya, where conflict between herders and farmers over natural resources is a common occurrence (Arevalo et al., 2014). In some instances – particularly during the election period – these conflicts escalate into tribal clashes. For example, in 2012-13 tensions between the Orma and Pokomo communities culminated in a series of violent clashes, leaving 118 dead and 13,500 displaced from their homes. According to Boyd et al. (2015), misinformation and rumours contributed to the violence, as well as resource conflict throughout the region.

Following this clash, two knowledge-related initiatives were set-up: 'Tana FM' and 'Una Hakika.' The former is a community radio station established in Hola, Tana River County. The primary purpose of the station focuses on peace building in the region, as well as improving irrigation and farming practices, health, education, and social/cultural issues (Health Communication Resources, 2015). The station is experiencing issues acquiring its license to broadcast to the entire Tana region, and so currently only broadcasts to a large part of the Tana River sub-county. Una Hakika, on the other hand, is an SMS-based service through which rumours can be reported and verified. The project started in Garsen, Tana River County, and is currently in the process of extending its network to cover the entire Tana region. Working alongside these two initiatives thus offered the opportunity to gain new insights into the role knowledge plays as a driver of cooperation in situations of resource conflict.



Photo 1. Tana FM presenter Galana Galole broadcasting live on air

2. Problem statement

Resource conflicts are complex, and have elements of both competition and cooperation. Understanding the drivers behind them requires a study into the context of the conflict. Knowledge is considered to be a key driver of cooperation in situations of resource conflict, however little is understood about the role knowledge plays in this respect. Resource conflict between herders and farmers is a common occurrence in the Tana River County. In some instances these conflicts escalate into violent clashes, often drawn along tribal lines. This research therefore seeks to understand the role knowledge plays within this resource conflict context, by working alongside knowledge-based initiatives Tana FM and Una Hakika.

3. Research questions

Main research question

What role does knowledge play in driving cooperation in the Tana River County resource conflict situation?

Sub-research questions

- 1) What are the drivers of competition and cooperation behind the conflict as defined by the different actors?
- 2) In which ways is knowledge utilised as a driver of cooperation in Una Hakika and Tana FM?
- 3) In which ways does knowledge interact with and impact the drivers of conflict?

4. Theory

Knowledge is defined as “the basic means through which we understand and give meaning to the world around us” (Leeuwis and van den Ban, 2007:94). The production of knowledge is then a phenomenon that is formed through interaction with others and the outside world (Bouwen and Taillieu, 2004). Snowden (2002) conceptualises knowledge as both a ‘thing’ and a ‘flow’, with this understanding of ‘knowledge as participation’ situated in a social constructivist paradigm (Wenger, 1998). In the context of decision-making scenarios, scientific knowledge can be considered as “‘things’ that will transform and be transformed by the ‘flow’ of knowing” (Steyaert et al., 2007:542). It differs from information or data, then, in that new meanings are co-produced amongst actors by engaging in collaboration with others. To ‘know’ something thus refers to the way in which one positions him or herself in relation to information – the lens through which information is negotiated and understood. The interchange of both expert and experiential knowledge provides an insight into actor’s respective viewpoints and allows for joint

constructions of reality to emerge (Daniels and Walker, 2001). Pahl-Wostl (2002) suggests that this type of participatory organisation can be thought of as a 'social learning' process. When dealing with multiple stakeholders in a social learning environment, clear channels of communication between parties are needed for the exchange and co-production of knowledge (Tippett et al., 2005).

Social learning is defined as the process by which actors, groups or communities learn to adapt in response to changing environmental and social conditions (Woodhill, 2003). Röling and Wagemakers (1998:54) state that knowledge in a social learning environment can "improve the quality and wisdom of the decisions we take when faced with complexity, uncertainty, conflict and paradox". The tenets of social learning were first discussed by Bandura (1977), who argued that learning occurs in individuals through the observation of people around them, as well as personal experienced reinforcement. Communication between stakeholders in a social learning environment can provide space for a critical engagement with different types of knowledge, questioning assumptions and dispelling misinformation (Schusler et al., 2003). Steyaert and Jiggins (2007) contend that for social learning to be an effective decision-making process, a degree of openness between parties needs to be present, as well as the opportunity for changes in governance to occur. Tippett et al. (2005) agree with this notion, arguing that participation amongst stakeholders is a continual process that requires an iterative approach in order for resource management to be successful over a long period of time.

Participation of stakeholders is defined as "involvement in the decision-making process" (Carr et al., 2012:2). The notion of stakeholder participation was pioneered largely by the work of Chambers (1983), who asserted that communities should be placed at the centre of development policy. Incorporating participation into resource management has subsequently come to be considered an integral component in decision-making, though according to (Enserink and Monnikhof, 2003) is regarded as a nuisance by many development players, and rarely enacted in practice. Bouwen and Taillieu (2004) contend that trust and communication are two key aspects needed for successful participation in decision-making. Dagrón (2009:460) describes communication as the "lifeblood of participatory development", whilst Newig and Fritsch (2009) observed a correlation between an increase in trust and conflict resolution. Fostering a culture of social learning in which knowledge can be co-produced by actors via participatory communication is thus deemed conducive to building trust amongst stakeholders (Pahl-Wostl et al., 2007).

The production of knowledge through communication can also be investigated via a study of discourse. Hajer (1995:44) describes discourse as "an ensemble of ideas, concepts, and categorisations that are produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social

realities”. Therefore knowledge and knowing refers to ascribing to different discourses in a bid to make sense of the material world in which one operates. A Foucauldian (1977) understanding of knowledge asserts that there is an intimate relationship between power and knowledge, in which subjects both inform discourse and are informed by discourse. Over time, these sets of ideas and practices become naturalised and thought of as truths (Arts and Buizer, 2009). Building on this, ‘framing’ is an actor’s way of thinking about or seeing an issue (Sonnnett et al., 2006). Frames are central organising ideas that determine how particular issues are approached and the perspectives that are adopted (Daniels and Walker, 2001). As Sonnnett et al. (2006:96) put it, the “process of framing describes attempts by social actors to promote a core idea or way of thinking about some issue, including ways of defining and responding to a problem.” Looking at the perceptions of actors in regards to resource conflict is thus important in order to understand the way in which the drivers of conflict are framed and various discourses they ascribe to within that context.

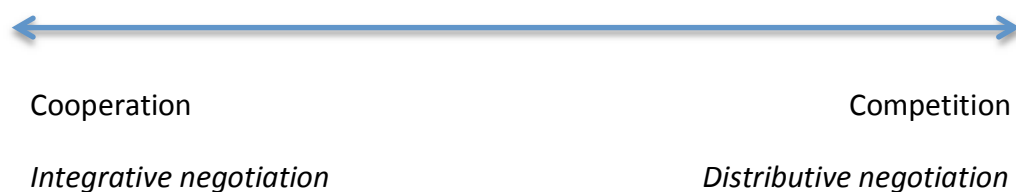


Figure 1. Cooperation-competition strategy continuum (Daniels and Walker, 2001:39)

Every resource conflict contains incentives for cooperation and incentives for competition. Deutsch (2014) describes some of the typical characteristics of cooperative and competitive relations in resource conflict situations:

Cooperation	Competition
Effective communication	Impaired communication
Friendliness and trust	Negative attitudes and distrust
Coordinated effort and sharing	Inability to divide and share
Sense of agreement regarding ideas	Rejection of ideas
Recognising and respecting each other’s needs	Focus only on self-interest
Willingness to enhance each other’s power	Seek to enhance own power and reduce power of other
Defining conflicting interests as a mutual problem to be solved	Solution only possible if one side imposes itself on the other

Figure 2. Characteristics of cooperative and competitive relations (Deutsch, 2014)

Understanding the drivers for cooperation and competition can provide insights into the causal links behind the conflict. Drawing on the perspectives of the individual in situations of resource conflict can therefore enable a picture of the conflict context to be painted, as defined by the actors involved (Bohle, 2009).

5. Methods

Resource conflicts are inherently complex, and applying prescriptive 'one-size-fits-all' approaches can lead to a number of assumptions and parochial conclusions (Molle, 2008). For the purpose of this research it was felt that a bottom-up inductive methodology was required. Consequently, the research draws heavily from the 'storyline approach' as discussed in Beveridge et al. (2012). Rather than applying a set of pre-determined drivers to the context, this approach invites the stakeholders to define the drivers themselves. Through looking at the various storylines that emerge from interviews, it is then possible to identify the different drivers and 'paint a picture' of the conflict situation. The first part of this chapter (5.1.) distinguishes between drivers, themes and knowledge. Chapter 5.2. then explores the storyline approach in more detail. Taking this as its basis, the methods are then broken down into eight steps that incorporate the radio programme method into its structure (Chapter 5.3.). The last part of the chapter (5.4.) looks at the research tools: radio programmes, semi-structured interviews, and focus group discussions.

5.1. *Drivers, themes and knowledge*

For the purpose of this research, drivers are understood as factors that influence the resource conflict situation. As aforementioned, conflicts are complex and contain characteristics of both cooperative and competitive relationships between actors. Likewise, the drivers are not simply drivers of cooperation or competition, but contain elements of both (to varying degrees). To refer to a 'driver of conflict,' then, is to refer to a factor or variable that has a significant influence on the conflict. These drivers impact the resource conflict in different ways; overlapping in places, interacting with each other and operating on different scales. After conducting helicopter interviews (see Chapter 5.2.), three main themes emerged that allowed the drivers to be more easily conceptualised in terms of their significance and relationships with other drivers. These themes consisted of: herders and farmers – actions taken by herders and farmers and their interactions, tribalism – the role tribal identities and politics plays in the conflict, and rumours – how misinformation contributes to the conflict.

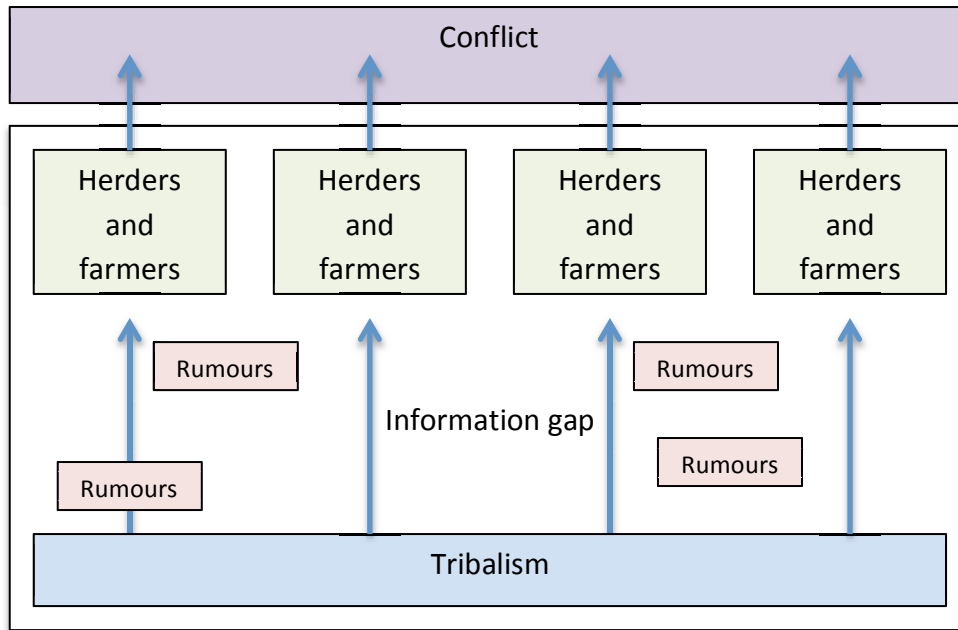


Figure 3. The interactions between the three driver themes and the conflict

These three themes differ predominantly in scale (see Table 1.), with herders and farmers dealing mostly at the farm or community scale, tribalism at the regional scale, and rumours on multiple scales. Figure 3. provides a simplified visual to indicate in a basic sense how these three themes operated at the different scales and influenced each other. As can be seen, tribalism underpins and informs the drivers found in the herders and farmers theme. These interactions occur within the information gap (discussed in depth later), in which rumours are able to spread.

Within this context, knowledge is also considered a driver. Indeed, like the other drivers, it too contains both cooperative and competitive characteristics, and undoubtedly can be used to either effect. Knowledge as a driver is a fluid concept that operates at a range of scales. In reference to the definition provided in Chapter 2., knowledge deals with ways of seeing, relating to information and giving meaning to the world around us. Through looking at the other drivers of conflict and the work of Una Hakika and Tana FM, the role of knowledge as a driver of cooperation within the context of the Tana River County resource conflict can thus be explored.

5.2. Storyline approach

The storyline framework is designed to try and understand how problems and solutions are perceived by people, the setting within which they are operating and the courses of action available to them (Roth, 1995). This acknowledges the power and inherently political nature of the framing process. The role of the researcher, then, is not to ascribe the problems and solutions from his or her viewpoint, but to discover the ways in which the actors construct and see the problems and solutions

themselves (Beveridge et al., 2012). In regards to resource conflict, the focus is on the farmers and pastoralists and how they perceive the drivers and potential solutions to the conflict. This approach falls in line with Bohle's (2009) argument that resource conflict literature needs to pay more attention to the individual and Barnett et al.'s (2010) call to start with the context-specific factors. The first step is therefore an inductive one, with all basic information coming from the actors and no assumptions about the conflict made on behalf of the researcher (Beveridge et al., 2012).

One way of achieving this is by looking at the 'storylines.' Stories are important as they denote the way in which we make sense of our surroundings (Beveridge et al., 2012). They indicate the ways in which actors make causal links between people, place and events. Crucially, storylines should not be taken as the 'true' reality, but as a "perceived truth ... [that makes] claims to what the truth of a matter actually is" (Beveridge et al., 2012:18). Attention to the positionality of the actor, the language they use, what they say and the way they say it are all therefore key considerations the researcher must take into account (Hajer, 1995). Respondents have tactical motives as well as finite information, and their stories serve as reflections of both. Verification of stories is acquired – as best as it possibly can be – through comparison of storylines. Contrasting the different responses, looking at their points of conflict and consensus thus reveal the apparent contestations in a particular place (Mollinga, 2008).

5.3. Methods in steps

By drawing from the work of Beveridge et al. (2012) and incorporating the radio programme element, eight steps were followed:

Step 1: Helicopter interviews – Interviewed 11 people of different occupation, gender and age. By looking at the storylines in the helicopter interviews, it was possible to identify three themes within which to capture the emerging drivers: management of the herders and farmers, tribalism, and rumours/misinformation.

Step 2: Radio interviews – Having established the three themes, interviews for each theme were designed and translated into Kiswahili. For the three programmes, a total of 24 in-depth interviews were conducted in Kiswahili by myself and a member of Tana FM. Informed consent was given by all participants prior to the interview for use of the recording for both research purposes and radio play.

Step 3: Identifying the drivers – These interviews were translated into English and transcribed. A round of line-by-line coding was then applied to the transcripts in order to begin processing of the data (Annex 1). These codes consisted predominantly of descriptive codes used to record emerging storylines (Conradson, 2005). Having completed the line-by-line coding, an evaluation of the codes was

made in order to observe recurring storylines, and see where there was consensus and conflict in these storylines. A round of analytic codes was then applied, in order to “dig deeper into the processes and context of phrases or actions” (Cope, 2005:225). This allowed for a more in-depth analysis into the storylines and an identification of the various drivers of competition and cooperation to be defined in accordance with the perspectives of the participants.

Step 4: Structuring the drivers – These drivers of resource conflict were then put into a table and determined in regards to the following domains: political – political dimensions of the driver, according to – who identifies the issue as a driver, temporal – the time in which the driver is relevant, spatial – the relation to space, scalar – scale of the driver, power – who/what has power in this driver, hydrological – how it relates to natural resources. In doing so, it allowed various aspects of each driver to be considered in contrast with each other, creating a structured overview of the conflict situation. It also helped identify the relationships between drivers – where there were overlaps, which drivers were more significant than others etc. Of particular note is the hydrological domain, as it elicits whether the driver is fundamentally related to land or water resources or not. This enables the researcher to assess whether the main drivers behind the conflict are directly resource-related, or whether they are predominantly influenced by other factors.

Step 5: Creating the programmes – Working closely with Tana FM members, recorded stories from the interviews were edited into a programme and a narration was written and recorded, creating a meta-storyline (see Box 1 in Chapter 5.3.1. for more details). This process was repeated for the three themes, totalling three radio programmes. These were then played on air, with a subsequent call-in session that was hosted by a radio presenter, recorded and transcribed. The call-in sessions typically lasted around 30 minutes comprised of listeners calling in after the programme had been played and discussing it with the presenter. Conversations ranged from questions posed by the presenter, to general comments on the issues covered in the programme. The transcripts of the programmes were then coded as explained in Step 3, and used in Chapter 6.2.3. to shed some understanding on the ways in which knowledge was utilised as a driver of cooperation, specifically in regards to Tana FM.

Step 6: Investigating knowledge – Interviews with Tana FM and Una Hakika staff, stakeholders and members of the community were conducted, this time purely for research purposes. The theme of these interviews was to examine the role of knowledge more specifically in regards to drivers of cooperation and as a driver itself in resource conflict. Two focus groups were held on the theme of the conflict and its drivers, and a stakeholder meeting for peace was attended. All of the above discussions were spoken in Kiswahili, recorded, translated and transcribed.

Step 7: Identifying the role of knowledge – The process of coding interviews discussed in step 3 was repeated here for the knowledge-themed interviews. Transcripts from the radio call-in session and personal observations from field notes made in regards to the radio programme method were also coded and considered. These were used to try and identify emerging storylines relating the perceived role of knowledge in resource conflict.

Step 8: Contrasting the drivers in relation to knowledge – The drivers of competition were then compared with drivers of cooperation that emerged from the storyline analysis in a table. The role knowledge plays in regards to each driver was then considered, and concluding points from the results were made.

5.4. Research tools

The following research tools were used to acquire data. The majority of interviews conducted were used for research and radio programmes, whilst the remainder of interviews and also the focus group discussions were used solely for research purposes.

5.4.1. Radio programmes

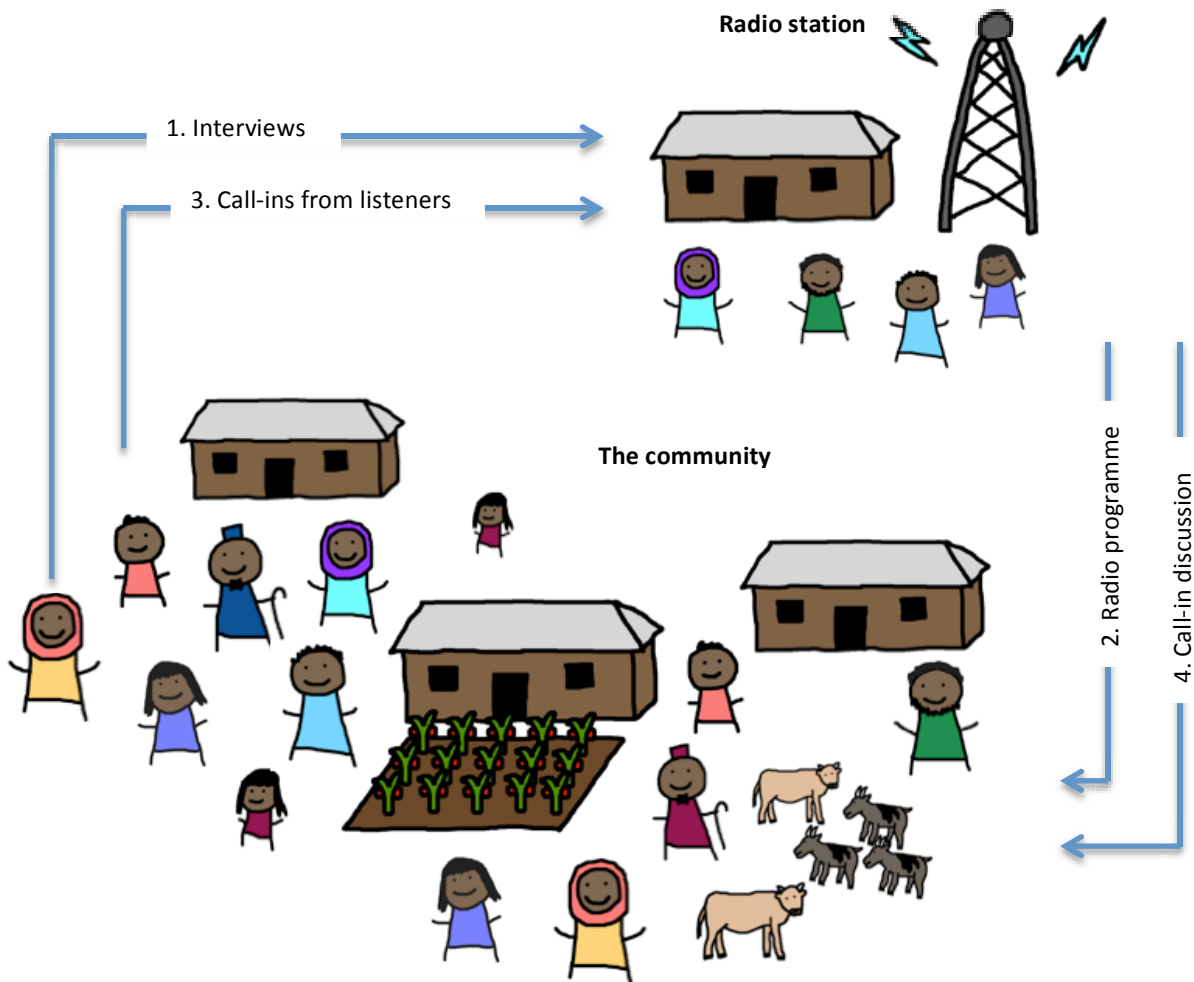


Figure 4. The flow of information between the community and radio station

Having identified the main themes of the conflict and its drivers as perceived by the actors involved (steps 1-4), three radio programmes that address these themes were created. Working with the community radio staff, this innovative approach took interview transcripts, edited them into a radio programme around one particular driver, and then played them on air for the community to engage with. The radio programme is thus a selection of storylines woven together into a meta-storyline that discusses one of the themes of conflict in particular. This meta-storyline is designed to provide a balanced overview of the theme, as determined by the collated storylines from the interviews. Having played the pre-recorded radio programme, the presenter then hosts a call-in session whereby he or she discusses the programme with the listeners. In this call-in session, participants share reflections, ask questions and make comments relating to the content. The session is then recorded, transcribed, and used as a source of data. For the purpose of this research, three radio programmes were produced and broadcast on air.

This unusual research method offers some unique opportunities to garner an understanding of the role knowledge can play in driving cooperation (see Figure 4). Storylines that shared a wide consensus could be considered as collectively perceived truths, whilst conflicting storylines were positioned next to each other to give a sense of balance to the meta-storyline, narrated by one of the radio presenters. Working closely with the community radio team was essential throughout this process, as the recorded interviews, editing, meta-storyline narration and final programmes were all conducted in Kiswahili. Whilst everything was translated into English so that I could participate in each of these stages, the radio staff decided upon a lot of the programme content to ensure it was suitable to be played on air. This whole process thus saw the transformation of individual storylines (which each convey knowledge from the actor) combined into a programme (collective knowledge in a single domain) that was then broadcast through the radio to the listeners of the show. A small selection of these listeners then called-in and shared their own input (knowledge), which was, in turn, heard by the rest of the listeners.

Box 1: Radio programme descriptions

Radio programme 1: Herders and farmers [17:17]

Tana FM member Maureen Buya provided the narration and the storylines were taken from 10 in-depth interviews with four farmers, five herders and the head of livestock management at Tana River County Dr. Mwamburi. The latter served as an expert opinion that provides a more management-focused storyline. The programme covered various themes including conflict stories, the impacts of the conflict, dealing with livestock in farms, governance issues and proposed solutions for how to live in cooperation.

Radio programme 2: Proverb exchange (Tribalism) [7:48]

Tana FM member Jane Meiyan provided the narration and the programme was put together with four interviews and a group exercise. The original intention was to use five participants from different tribes, but after two cancellations we opted to use four people from three different tribes: Pokomo, Giriama and Kikuyu. Interviews provided the listener some information about the participants; their tribal identity and how they felt cooperation between tribes could be brought about. The focal point of the programme was the group exercise, whereby the participants took turns sharing a proverb from their respective mother tongues, and explaining the meaning in Kiswahili. Having done so, each participant then taught a member from a different tribe how to say their proverbs.

Radio programme 3: Rumours [22:21]

Tana FM member Zeinab Hasan provided the narration and the storylines were taken from 9 interviews in which the main discussion featured around an experience of a rumour the participant had had. Another interview provided by John Green, an Una Hakika staff member, served as an expert opinion. His voice and Zeinab's narration provided the meta-storyline, which gave a conceptual and practical discussion on the role of rumours and their relationship with conflict. This meta-storyline was interspersed with rumour stories from 6 of the 9 interviews (as some were not deemed appropriate for radio play) that resonated with and affirmed John and Zeinab's dialogue.

5.4.2. Semi-structured interviews

Following a semi-structured interview format enables a degree of reliability and consistency to the data via predetermined questions, whilst simultaneously giving space for the interviewee to bring new and relevant information to the attention of the interviewer (Longhurst, 2003). The quality of the data is therefore dependent on

the interviewer's ability to allow the interview to take unexpected tangents without losing track of the central topic (Fylan, 2005). Language barriers can make this process slower, and the quality of data is further reliant on the translator's ability to communicate information from one language to another. Consequently, it was decided that interviews should be conducted by members of Tana FM in Kiswahili, and later translated into English for research purposes. This enabled conversation to flow more naturally without language limitations, and also enabled the interviews to be used for radio play. Further, as Tana FM is well established in the area and many of the research participants were frequent listeners, an element of familiarity and trust was observed on behalf of the interviewee, despite the vast majority of participants having never met any of the Tana FM team.

My presence at interviews still, undoubtedly, impacted the process to some degree. However, by positioning myself (a white British male) as a fellow Tana FM member but allowing my colleague to take the lead in interviews, I was able to minimise the influence my presence had on the interviewee. One obvious limitation of this is that I have little control over the interview myself, and am dependent on the interviewing skills of the Tana FM member whom was conducting it. This proved not to be too much of an obstacle, though, as all members of the team had received training in semi-structured interviews as required of their profession. Besides from designing the interview questions then, little input on my behalf during the interview process was required. Interviews typically lasted 15-60 minutes, with the Kiswahili recording edited for programming purposes, and an English translation made by Tana FM team members for research purposes.

5.4.3. Focus group discussions

The primary difference between interviews and focus groups is that focus group discussion incorporates group dynamics and interaction into the data collection process. Here participants are encouraged to speak to each other about a particular topic, whilst the researcher takes the role of facilitator. This provides information on what people think, but also why they think that and the way that they think. Seeing the way people communicate is useful, as "knowledge and attitudes are not entirely encapsulated in reasoned responses to direct questions" (Kitzinger, 1995:299). Interaction amongst peers can initiate more measured responses, with participants commenting on each other's viewpoints and ideas. Another way that focus groups differ from interview is that members of the community can facilitate group discussions. This can help foster more organic and natural conversations due to the absence of external actors and the presence of familiar characters with whom the participants have pre-established relationships.

For this research, two focus groups were held as part of a peace meeting that had been organised, with a member of the community asked to facilitate. Members of the focus groups consisted of a mix of herders and farmers, with a range of ages present, though the majority of participants were men. The groups were tasked with discussing the resource conflict drivers and thinking of solutions to the problems as they perceived them. The sessions were held at the same time and lasted 45 minutes each. They were held in Kiswahili, and afterwards the two groups were brought together to discuss their concluding points. The two sessions and the discussion afterwards were all recorded and later translated into English for research purposes.

6. Results

Chapter 6. looks at the research data to provide answers to the main research question: What role does knowledge play in driving cooperation in the Tana River County resource conflict situation? Each of the three sub-chapters corresponds to a sub-research question, with the findings of each then collated and elucidated in Chapter 6.4. Results summary.

6.1. Drivers

This Chapter (6.1.) seeks to identify the drivers of behind the conflict, relating specifically to sub-research question 1: What are the drivers of competition and cooperation behind the conflict as defined by the different actors? Following the helicopter interviews, three main themes for the various emerging drivers were identified: herders and farmers (Chapter 6.1.1.), tribalism (Chapter 6.1.2.), and rumours/misinformation (Chapter 6.1.3.). The Results explore these three themes, using storylines from participants to identify the drivers and their relative significance.

Below is Table 1., which organises the drivers identified in Chapter 6.1. into various domains. The drivers are coloured according to their theme: herders and farms in green, tribalism in blue, and rumours in red.

Driver	According to...	Political	Temporal	Spatial	Scalar	Power	Hydrological
Livestock in farm	All respondents	Often seen as conflict between tribes, failure in governance	Ongoing, more frequent during dry season	Concentrated near river and in irrigation scheme	Can escalate into a tribal conflict	Initial damage inflicted by livestock of herder on property of farmer	Lack of available green pasture, access to river
Access to water	All herders, acknowledged by one farmer	Malkas not maintained, public land used for private means, failure in governance, tribal claims over resources	Ongoing, more frequent during dry season	Particularly problematic on the west side of the river in Tana River County	Community scale	Tribal claims over natural resources	Control over who has access to what parts of the river
Lack of grazing areas	Talked about mostly by herders, and one farmer	Contestation over limited land, County bill considered with opposition from farmers	Particularly relevant during dry season, proposed extension of grazing area	Conversion of land into grazing area in a region with limited available land	County scale development	A government bill that is perceived to be "favouring herders"	Increasing grazing space to reduce pressure on resources elsewhere
Herd management	Herders and farmers, but mentioned more by herders	Herd misconduct, illegal use of children	Ongoing	Widespread throughout Tana River County	County scale	Problems occurring due to misconduct of herders	N/A
Nomadism	Mentioned by four herders	Cultural livelihood practice in conflict with fear of strangers	Ongoing	Herders coming into Tana River County	County scale	Conduct of both herders and locals	Continual search for greener pasture
Governance and corruption	Corruption talked about generally, but far more farmers than	Governance failure, no trust in authorities	Ongoing	Prolific throughout all aspects of life	Multi-scalar	Power lies with the perpetrators and the	N/A

	herders mentioned it in relation to compensation for damages					authority	
Debt	Only discussed by farmers, particularly in the irrigation scheme	Lack of financial support for farmers, negative cycles of debt	Ongoing	Particularly relevant for irrigation scheme farmers, and to a lesser extent farmers by the river	Community scale	Farmers put in a vulnerable situation	Payment for irrigation putting pressure on farmers
Lack of cooperation	The majority of herders and farmers	Opportunities for farmers and herders to work together not fully realised	Ongoing but not as frequent as it could be	Trade and fodder clearance from farmland	Farm scale	Interactions limited by social and cultural barriers	Additional food for livestock
Lack of education	Mostly by herders, about other herders (and farmers to a lesser extent)	A greater understanding of management conduct and impacts of conflict needed	Ongoing, needs to be addressed prior to upcoming elections	Throughout Tana River County, focusing on youth in particular	Community scale	Lack of infrastructure and government support makes it difficult	Improved knowledge regarding resource management needed
Fixed identities	Most respondents talked in such a way, only two did not	Livelihoods strongly associated with tribes	Ongoing	Emphasised more in the Tana region than elsewhere in Kenya	Regional scale	Reduces complexity of reality	N/A
Collective discourse vs. tribal discourse	Most respondents used collective discourse, particularly if interview was intended for radio use	Use of different language to frame issues in different ways	Ongoing	Tribal discourse more frequent in private settings, collective discourse common in public forums	Regional scale	Language used to frame events in certain ways, promotes particular ways of seeing the world	N/A

Politics	Most respondents mentioned tribal politics, though more emphasis in Tana FM and Una Hakika respondents	Sense of superiority ascribed to tribe with leader in power	Ongoing, increased tension in run-up to elections	Varies from village to village but common throughout Tana River County and beyond	Regional scale	Promotes power disparities amongst tribes, encourages tribalism and 'Othering'	N/A
Tribal conflict	Most respondents mentioned tribal conflict, though more emphasis in Tana FM and Una Hakika respondents	Revenge killings common, conflict seen as inherently tribal, particularly exploited during run-up to elections	Ongoing, increased tension in run-up to elections	Varies from village to village but common throughout Tana River County and beyond	Regional scale	Leaves communities vulnerable, significance of rumours increased, encourages tribalism	N/A
Rumours	Mentioned by around half of respondents, particularly Una Hakika and Tana FM interviewees	Rumours sometimes spread for political gain, inherently political in nature	Ongoing, increased frequency in run-up to elections	Frequent across space	Multi-scalar	Power lies with people's response to rumours, some rumours spread for political gain	N/A
Information gap	Mentioned by Tana FM and Una Hakika respondents only	Information void leaves space open to rumour propagation	Ongoing	Currently exists outside of Tana FM's broadcast radius	Regional scale	Allocates more power to the information that is available within this space	N/A

Table 1. Identified drivers of conflict in relation to various domains

As can be seen in Table 1., drivers in the herders and farmers theme were not uniformly identified by all herders and farmers, but that both groups put more emphasis on some drivers and little/none on others. For the tribalism and rumours themes, however, the majority of respondents collectively agreed upon these drivers more unanimously. Each driver pertained a political element, though the tribalism

drivers of conflict were particularly potent in this respect. Temporally, most drivers were ongoing issues, though there was an increase of conflict during the dry season observed for the herder and farmer themed drivers, and in the run-up to the elections for the tribalism themed drivers.

Access to water and lack of grazing areas were the two drivers with the strongest spatial element, with the former constituting the main cause for higher frequency of conflicts along the riverside, and the latter being a key reason why herds were taken near farms in the first place. For power, the herders and farmers theme highlights the disparity between the two groups largely due to the ineffective compensation mechanism that puts the farmers at a financial disadvantage. Tribalism drivers, in contrast, tend to focus more on different perspectives relating to the various tribes, and the power of language to motivate different discourses. The two rumours drivers highlight the power of information and misinformation, and the relation they bear to driving conflict. Over half (9/15 of the drivers) related to hydrological properties in some sense. This means, therefore, that just six of the drivers of the conflict were not directly linked to resources.

6.1.1. Herders and farmers

Livestock in farms

When an animal is found in a farm, there is a widely understood procedure for farmers and herders to adhere to, as one herder describes:

“If the animal gets into the farm and eats some of the crops, then the farmer must tie up the animal and bring it to the community leader. Then we sit down and calculate the damages, and the herder must pay the farmer. Likewise, if a herder’s animal is injured or killed by a farmer, then the farmer must pay for damages in accordance with the law.” (Fatuma Gurumesa, herder)

However, there were several stories from farmers where, having found animals on their farm, this procedure was followed but no compensation was received. Indeed, all of the farmers interviewed expressed little to no trust in the legal mechanism in place. One farmer discussed his response to this:

“Once you’ve experienced damage to your farm twice without compensation, the third time the cattle come onto your farm you just react – you just attack them” (Aaron Haro, farmer)

Many farmers and herders described this as the “starting point” of conflict, with both parties angry at having received damage to their property, fighting then ensues. Continual governance failure in regards to payment of compensation

reduces trust in the mechanism and a sense of powerlessness for the farmer. This is therefore a central driver in the resource conflict.

Access to water

Respondents widely agreed that the phenomenon of livestock entering farmland was more of a problem during the dry season as there is less green pasture for herds to graze upon, increasing the appeal of the crops. Gaining access to the river for drinking purposes was also an issue for livestock. This is because many of the farms are located next to the river and use the water for irrigation. In some places these farms serve as a barrier through which livestock have to pass in order to reach the river, increasing the risk of damage to crops. Designated routes through to the river known as 'malkas' enabled herders to take their cattle to the river without disrupting farmland. The majority of malkas, however, have since been closed with much of the land having been reportedly converted into farmland. One focus group participant described a scenario in which some farmers had been charging herders 300 shillings to take livestock over farmland that had previously been allocated for a malka, giving an indication of some of the issues the contested claims over land and resources are bringing.

When asked about the malkas, one interviewee remarked, "each group is fighting for the ownership of the river" (Fatma Mzee, Tana FM). In a similar vein, another interviewee commented:

"I think malkas need to be established so that if an Orma needs to give water to his cattle he can just go straight to the river without any risk of entering somebody's farm and then leave at once. But the Pokomos think that the Tana River is theirs alone. But it belongs to all Tana River people, of all tribes" (Abdullah Maalim, herder)

For many other respondents like Abdullah Maalim, when discussing the malka situation the choice of language changed from 'herders' and 'farmers' to 'Orma' and 'Pokomo'. For these actors, the contest over access to the river appears to be predominantly influenced by tribal undercurrents. Three respondents, however, talked about the issue from a more management-orientated discourse, appealing to the government to intervene and re-instate clear routes. From a spatial perspective addressing this driver could reduce the number of conflicts that occur near the river during the dry season. Whilst potentially reducing the frequency of conflicts, though, this driver is not the root of the problem at hand.

Lack of grazing areas

Areas of land are assigned for grazing purposes to provide space for the high number of pastoralists and minimise the amount of livestock in the vicinity of farmland.

However, as one actor during the stakeholder meeting observed, “the number of livestock exceeds the pastures available in the grazing area.” In response to this issue, the County Assembly are currently considering a bill that would expand the grazing areas. The bill has provoked angry reactions from a few farmers, including one respondent who argued that the bill is “favouring herders over farmers” (Babzidi, farmer).

Finding green pasture during the dry season is a constant concern for herders, with many describing reductions in the number of their livestock and the quality of their produce during this period. Whilst the impact the bill will have if it is passed into law is unclear, there is a shared sense amongst all participants that land in Tana River County is spatially limited, highlighting the pressure that resides over any management decisions taken.

Herd management

Losing an animal from the herd was reported to be a fairly common occurrence, constituting the main reason why animals end up on farmland. One reason why animals are frequently lost is attributed to herders grazing too many livestock in their herds at once. Many farmers and herders shared this notion, agreeing that smaller herds should be kept because they are easier to control and less likely to get lost from the herd. Managing the herd is typically done from behind a group of moving livestock, and as one herder noted, “if you have 200-300 cattle ahead of you, it is easy for cattle at the front to enter a farm without you realising and causing damage.”

Another frequently reported problem was that of child herders:

“One issue is that of sending young boys to care for cattle and grazing. It is very difficult for a young boy to manage a big herd of cattle ... the kid doesn’t know any better, and he isn’t aware of where the cattle should and should not be grazing” (Stakeholder meeting)

From my own observations I too noticed a high number of children presiding over cattle with no adult present to help with their supervision. However, Ismael Dida – an Orma herder – argued that cattle herding was a key aspect of Orma culture and that children had been involved from a young age for generations. Further, he noted that some families don’t have enough adults in the family to care for the herd nor the money to hire somebody, and it is therefore not uncommon for that responsibility to fall to the children. In contrast, others reasoned that it is a legal requirement for children to attend primary education at school, and that putting children in charge of a herd was irresponsible and illegal. According to both herders and farmers, this is a key driver of the conflict, as appropriate herd management would greatly reduce the numbers of livestock getting lost from the main herd.



Photo 2. Actors discuss the drivers of conflict at the stakeholder meeting

Nomadism

Pastoralism lends itself to a largely nomadic lifestyle, though over half of the herders spoken to have settled in Tana River County for the foreseeable future. Amidst the climate of conflict, the movement of unknown people into the region has raised security concerns for some residents:

“Be aware of strangers coming into the area. It is important to know who people are and what they are doing in the region. If you see any strangers, you should report it to the police before any harm occurs. It’s important to your neighbours.” (Focus group 1)

Four respondents noted that newcomers to the County often did not know the geography of the land or its cultural make-up, leading to further problems regarding livestock on farmland and tribal tension. When conflict did occur, many herders said their first response is to take their livestock away from the conflict to places where fighting was not occurring. This itself comes with its own difficulties:

“Sometimes guests are not very welcome, but we have to behave and cope with everything. As long as there is peace in the area we have to make do.” (Ismael Dida, herder)

Nomadism an integral part of the herder livelihood and tradition, though not particularly significant as a driver of conflict itself.

Governance and corruption

The primary reason why farmers or herders were unable to receive compensation for damage to their property is corruption, as Nathan Maro (farmer), describes:

“If they bring cattle into your farm you get angry because they are destroying your crops. But then you can’t do anything because if you take action, they have money and will bribe the authority.”

Corruption is a phenomenon endemic to all aspects of life in the Tana River County and was frequently talked about by interviewees. For herders and farmers, there is a disparity in power present in that – by virtue of that fact that livestock eat crops and not the other way around – it tends to be the herder who causes damage to the farmer’s property. It is therefore the herder who has the opportunity to bribe the authority and avoid paying compensation to the farmer, who is rendered powerless in this governance arrangement. During a focus group discussion, one participant observed that “the person at fault here is not the herder or the farmer; it is the authority”, and it is not surprising to find that many of the farmers expressed low levels of trust in the current governance mechanisms. These sentiments were not held by the farmers alone, however, as Abdi Mamadi (herder) explains:

“The County Assembly don’t help us with anything. We can smell the food the County people are eating, but can we have some? No, no we can’t.”

Receiving compensation for damage to property is thus dependent on the perpetrator being honest and taking responsibility. This is a problem in itself, as a focus group participant argues:

“People may lie about the extent of damage there is to crops, or the number of cattle that have been killed. One time, for example, a herder brought two goats that been killed to the station but claimed it wasn’t just two, but ten. We consider this a form of corruption.”

These factors combined have left little trust between herders and farmers, and the authorities in charge. When it comes to damage to property, the farmers are at a disadvantage and if compensation is not given, then a common response is seemingly to attack any livestock found on farmland. The failure of the legal mechanism to ensure payment for damages makes this a key driver behind the conflict, arguably the most important in the herders and farmers theme. This is because it creates a power disparity between the herders and farmers, with the former dominating the latter.

Debt

Acquiring land and farming start-up investments are expensive, and several farmers that I spoke to in the irrigation scheme had taken bank loans to cover the costs. According to their story, after setting their plots up, crops were affected by drought and they experienced poor harvests. As it stood, they were struggling to feed their families and make enough profit to pay off their loans, and then livestock came onto

the fields and damaged the crops. When no compensation was paid, many of the farmers were pushed into a debt that they had no way of paying off. One farmer in this village refused to be interviewed because he was too angry about the situation. A few days prior, he had found his crops eaten with no livestock or herder in sight, and nobody stepping forward to take responsibility for the damages. His colleague offered the following commentary:

“The losses experienced by the farmers have resulted in farming becoming unprofitable, with large debts accrued instead. Many of the farms have become bush, and the scheme we work on is still young – only five years old – and right now there is little money from the farms to do farming, bringing productivity to a standstill. Some debts have reached 300,000 shillings, some don’t have debts but they can’t farm because the whole block needs to be occupied by farmers in order for pumping water from the irrigation people to be worthwhile, which bring everyone’s farms to a stop.” (Aaron Haro, farmer)

Many farmers are consequently falling into debt cycles, which in turn have negative impacts on other farmers around them. This driver puts greater pressure on farmers to defend their property and can further exacerbate a difficult situation – perhaps increasing the likelihood of resorting to violence.

Lack of cooperation

Despite many reports of conflicts between the two groups, there were also stories of cooperation between herders and farmers. Trade is commonplace, with herders exchanging milk and meat with farmers for vegetables and fruits. There were also reports of herders being allowed to graze on post-harvest farmland fodder in exchange for money or food. Several farmers, however, considered asking for permission to do this to be an important dynamic in the cooperative arrangement. As Jacob Mohamed (herder) notes, “sometimes farmers don’t want animals on their land, even if there are no crops in the farm”. Considering the ways in which farmers and herders could work together, cooperation between the two groups seems fairly underexplored.

Lack of education

The need to “raise awareness” amongst farmers and herders about how to conduct their respective practices was frequently cited. One interviewee argued education was essential to building peaceful relationships:

“We need to educate, inform and promote dialogue. Through information, people know fighting is not good. Through education, people learn about the reasons behind fighting and how to move forward.” (Galana Galole, Tana FM)

According to this perspective, understanding the impacts of conflict, and what drives the conflict in the first place is key to preventing further conflict from occurring. Several research participants stated that education for the youth was particularly important “as most of the time it is the youths who fight” (Focus group 1). Information sharing was regarded as the main component needed to achieve this, with one actor in the stakeholder meeting arguing that “we need to get information to the villages” and a focus group participant saying, “this awareness should be reaching all the villages in the Tana River.” Abdi Mamadi (herder), however, notes that little was being done by the government to provide conflict management education, and that those who do wish to share are inhibited somewhat by the lack of good roads and infrastructure. Problems regarding funding to support such initiatives were also mentioned. This driver overlaps a lot with herd management, as education appears to be the most befitting response to address poor herd management practices.

6.1.2. Tribalism

Fixed identities

As aforementioned, research participants often referred to ‘herders’ and ‘farmers’ interchangeably with ‘Orma/Somali/Wardei’ and ‘Pokomo’. This is due largely to a strongly held sense of tradition in which pastoralism has been intimately interwoven into Orma/Somali/Wardei tribal culture, and likewise with farming and Pokomo tribal culture. In an interview with the government official Dr. Mwamburi, who is in charge of livestock management in the County, he argued that:

“One thing we have to understand is that these two communities [farmers and herders] have to co-exist, because they are all part of Tana River but stem from different cultural beliefs, so farming and herding has to continue”

Yet throughout the course of the research it became evident that there were many exceptions to the rule, and referring to a farmer as a ‘Pokomo’ is problematic as many Pokomos do not farm and are instead herders themselves, and vice versa for the Orma/Somali/Wardei. Three of the interviewees I spoke to kept both livestock and farmland. However, when asked if they would identify as more of a farmer or herder, the two Orma respondents regarded themselves primarily as herders, and the Pokomo respondent as a farmer. Despite there being a lot of crossover between the tribes and their respective trades, over half of respondents used Orma/Somali/Wardei and Pokomo as synonyms for herders and farmers, with only one participant acknowledging that some exceptions did indeed exist. This driver thus gives an indication of the way in which people think about themselves and people from other tribes. When it comes to tribal politics and conflict, applying stereotypes to different tribes is an easy yet parochial practice that solidifies and

increases the distance between the constructed sense of 'us' and 'them' (Landzelius, 2002). This process has proven to be a significant driver of violence in other conflict situations around the world (van Houtum and van Naerssen, 2002), and is considered a key driver in the case of the Tana River County conflicts.

Collective discourse vs. tribal discourse

When promoting peace, the majority of research participants argued that there was a need to think beyond tribal categories, instead appealing to each other as fellow Kenyans:

“Both tribes come from Adam... We should not hate each other, saying ‘this is Pokomo’ or ‘this is Orma,’ we need to leave tribalism behind us and move forward as one people.” (Abdullah Maalim, herder)

It is also popular to wear garments or accessories with the Kenyan flag on it, which further feeds into the notion of ‘being Kenyan’. It needs to be noted, however, that all research was either conducted in a public forum or intended for use on the radio. When talking to people informally in a more private setting, the collective discourse generally fell second to more tribal discourses that tended to dictate people’s thinking. On the radio, however, discourse was predominantly collective:

“...**we** are praying that **we** all respect each other. Conflicts bring no benefits to **us**” (Call-in, Herders and farmers programme).

The use of the 1st person pronouns in the plural here (in bold) highlight this sense of ‘one people.’ What the contrast between this discourse and the more tribal discourse found in private conversations indicates is not clear; whether the collective discourse is a politically correct mask to disguise a more genuine tribal way of thinking, or whether tribal discourse is more commonplace but there is an acknowledgement that collective discourse is a ‘better’ way to think in order to move towards more peaceful relations between tribes.

The use of collective discourse also extends to the natural resources:

“What we should say is this river belongs to Kenya, everybody needs it – farmers need it, herders need it, everybody needs the river.” (Focus group 2)

Here the participant acknowledges the spatial gap between the way people view and speak about the river currently – presumably in line with tribal discourses of ownership (as discussed previously), and how they “should” speak about the river – as a resource of Kenya.

Politics

[Some respondents have been anonymised here due to the sensitivity of the subject]

During the election period, tribal politics comes to the fore:

“In Tana River it’s not about party, it’s about the tribe ... they don’t believe that if one tribe wins, the other one will be satisfied – there is that misbelief”
(Anonymous)

Anonymous argues that:

“There is not always conflict, but there is no trust. There is no trust between them, because at the moment the Pokomos say that if a Pokomo votes for an Orma; that will be the end of him – he will be slaughtered and thrown into the river”

The belief that politicians favour their own tribes when in power appears to run deep throughout society in the Tana River County. The current Governor of the County is Hussein Dado, an Orma Kenyan. According to several Pokomo and non-Pokomo respondents, because of this, many Orma people feel a sense of “superiority” over other tribes, as one anonymous respondent explains:

“They feel like they are superior to the Pokomos. Our governor is an Orma-Pokomo but he mainly takes the Orma side. So they think that the government is theirs, and they can do anything they like and the rest can’t do anything because we are running the government. It’s the politics that gives them the sense of ego”

Anonymous argues that this sense of superiority has come about because since independence there has always been a Pokomo Governor in charge. Throughout the interviews several interviewees commented on this, and the need for a “fair and free election” (Anonymous). However, corruption is also a problem during the elections. Anonymous argues that is common for politicians to appeal to his or her tribe and offer money to guarantee their votes. Further, reports of politicians inciting hatred against other tribes have been made in elections past, as Anonymous describes:

“There are politicians that are using the electioneering period for political gain, so they make sure people fight and through that, the rest are driven out of the county and they get big numbers.”

The election period and the escalated tensions that they bring between tribes create a breeding ground for rumours to circulate. John Green from Una Hakika makes the observation that “there is an increase in rumours when you approach the general

election.” This driver increases tensions between communities and tribes, meaning the likelihood of conflicts quickly escalating are increased.

Tribal conflict

Conflicts between herders and farmers can escalate into tribal conflicts. This is due in part to a sense of tribal retaliation, whereby revenge killing occurs. Fatma Mzee (Tana FM) explained:

“If I fight in Hola and people in Garsen hear that Fatma from the Orma community and Joseph from the Pokomo community have had a misunderstanding, your tribesmen will attack my tribesmen in Garsen.”

Indeed, three weeks prior to my arrival there was an incident involving herders and farmers from different tribes in which three people were killed. The following day a revenge killing took place where an Orma teenager was killed – a boy (name not known) without any relation to the original fight beyond his tribal affiliation. Fatma Mzee describes how she felt following this conflict:

“It was a bit tense and there was a time that I felt like I should leave this place. I am living in the hinterland and many people think I am an Orma. The Orma think I am an Orma, until they speak to me and don’t get a response, then they think I am a Pokomo. It’s like whatever happens from this side or that side, I am just in between.”

Tension between tribes and their responses to conflict thus reduce security and trust between the various communities. In a similar way to the election period, this climate of fear also enables the propagation of rumours, as Brian Maro (Tana FM) notes, “this is where rumours become a big problem, information is important.” This driver overlaps a lot with the Politics driver, as the run-up to the elections is the period during which tribal conflict is most likely. It also has a strong overlap with the fixed identities driver, whereby members of different tribes are seen as ‘Others’ (Said, 1979). By drawing upon stereotypes, these Others are reduced to dehumanised bodies, making tribal conflict easier to justify (Haslam, 2006)

6.1.3. Rumours

The nature of rumours

One participant called rumours “one of the biggest factors that promotes conflict in the Tana River” (Galana Galole, Tana FM). Whilst most other storylines placed more emphasis on other drivers as the primary causes of conflict, many regarded rumours as playing a significant contributory role. In particular, rumours often serve to escalate minor conflicts into larger ones. As Galana Galole (Tana FM) explained:

“A person will come and tell you that there are people fighting on the other side of the river, this tribe is killing that tribe. That’s when they start phoning each other and word travels around”

Drew Boyd (Una Hakika) described these as “small flash points” which rumours fan into a flame and “spread like a fire.” Many respondents argued that whilst rumours were rarely true in the exact detail that they are heard; there was often some semblance of truth in the story. This means that both ignoring and believing rumours is problematic, leaving people in an uneasy situation. As mentioned previously, rumours are reportedly more frequent during the run-up to the elections. This suggests that heightened tension between communities leaves them more vulnerable to the influence of rumours, which can in turn lead to action based on misinformation. As Chris Tuckwood (Una Hakika) states, this creates an “atmosphere of hatred, distrust and fear that enables violence.” In such instances, it is not the truth that matters, but the perceived truth (Molle, 2008). Rumours are thus considered to be a key driver, denoting the power of (mis)information and its relationship with conflict.

The information gap

One main reason why rumours are easily spread is because in the Tana region there is an “information gap” (Chris Tuckwood, Una Hakika). This refers to the current lack of access most residents in the area have to local media. In this context local media could provide verified and trustworthy information for people to engage with. This would bridge the information gap so that local events are well documented and people feel comfortable in their knowledge of current affairs. Clearly this is a role that Tana FM could play for the Tana region, and indeed that is the intention of the station. Due to governance issues in the license application, however, they have been unable to get permission for wide-scale coverage and are instead limited to Tana River sub-County. As things stand, there is:

“...this huge information deficit where people within Tana River County or just the sub-county of the Tana Delta were getting information from Nairobi faster than they were getting information from a village 500m away” (Drew Boyd, Una Hakika)

In the absence of other accessible information, rumours fill the void. The danger here lies not in the propagation of rumours, but the interaction people have with rumours and their attitudes towards them. Instead of trusting rumours to be true because that’s the only information available, Chris Tuckwood (Una Hakika) argues that people need to develop a critical engagement with rumours and seek ways in which to verify their validity. This driver overlaps with Rumours and is an explanatory variable for their proliferation in the Tana region.

6.2. Knowledge-based initiatives

This Chapter (6.2.) explores the different ways in which knowledge is applied as a driver of cooperation, relating specifically to sub-research question 2: In which ways is knowledge utilised as a driver of cooperation in Una Hakika and Tana FM?

Interviews with staff members and users/listeners of both projects were conducted to acquire this data. Chapter 6.2.1. covers Una Hakika, Chapter 6.2.2. looks at Tana FM, and Chapter 6.2.3. explores the three radio programmes made to address the three themes of the conflict drivers.

6.2.1. Una Hakika

How it works

Una Hakika is a rumour verification service whereby users can report rumours via SMS, phone calls or the Internet and receive a response that details the validity of the rumour. When rumours are reported, they are entered into a database and prioritised in regards to their urgency by a member of Una Hakika staff. The rumour is then verified by contacting community ambassadors, the Police, NGOs, community leaders and other contacts Una Hakika has in its trusted network, who are located in the vicinity of the reported rumour. They then report their findings back to Una Hakika, who corroborate the responses to try and assess what the reality of the situation is. If the rumour is confirmed to be false, then Una Hakika report this information back to the original service user who made the enquiry. If the rumour is confirmed to be true, then Una Hakika contact the Police and alert them to the situation. Once the Police have dealt with the situation, Una Hakika then report back to the service user confirming that the rumour was true, and that it has been handled by the Police. In such a case, Una Hakika ask the Police to ensure that any damages that may have been caused are appropriately compensated for by the perpetrator. If a rumour cannot be verified, then Una Hakika will report back to the service user informing them that they cannot currently confirm whether the rumour is true or false.

Trusted flow of information

The service is contingent on communities feeling that they can trust Una Hakika – both in giving rumour reports, and the quality of rumour verification they receive in response. As Drew Boyd (Una Hakika) notes, Una Hakika aims to “become a trusted verifiable source of information.” This is achieved, in part, through the work of staff member John Green, who meets with the communities regularly. He is tasked with expanding the network across the region, and has built trust through relationships developed over time. This then encourages communities to use the service when

they hear a rumour, knowing that the verification they receive can be better trusted than the original rumour they've heard.

The service users, Una Hakika staff, and trusted partners thus constitute a network through a multi-directional flow of information. This network co-produces knowledge in a responsive and targeted way that serves to counter misinformation and provide trusted verified information upon which people and communities can rely. One additional service that Una Hakika also provides is public service announcements. Ranging from information about dealing with a cholera outbreak, to how to register to vote in the elections, these general pieces of information are sent out via SMS to all service users. In doing so, it seeks to fill the information gap, both in dispelling false rumours, and providing the network with relevant knowledge regarding topical issues.

Technology

The Una Hakika network is enabled by the technology that exists throughout the Tana region. The majority of people in the area have access to mobile phones, which allow information to be transported across long distances at high speeds. The Tana region is relatively large in contrast to its population of around 250,000, and technology enables Una Hakika to "...create a really efficient system where a small number of people can manage a large amount of data" (Drew Boyd, Una Hakika).

Such a network could work without ICTs, but would not operate fast enough to provide the effective response needed to deal with misinformation. Technology has thus facilitated a compression in time and space, allowing Una Hakika to function at the necessary speed needed to verify and deal with rumours before they escalate any further.

Changes in attitude

Asides from countering misinformation, another goal of Una Hakika is to develop changes in attitudes towards dealing with rumours, as John Green (Una Hakika) describes:

"We want to see a change in people's attitudes toward rumours, so that whenever someone receives a rumour they know to get it verified before taking any action or making any kind of decision."

Through education on the role of misinformation and the effects acting upon misinformation can have, communities can learn to critically engage with rumours:

"They often feel there is no reason to study rumours, but if you teach communities about what rumours can do, then they will look back and say

‘well yes this rumour led to this.’ They see that rumours caused this problem, and we can avoid that happening by doing this” (John Green, Una Hakika)

Highlighting the causal relationships between rumours and conflict can thus help foster a more critical attitude towards rumours. The name itself ‘Una Hakika,’ which translates as ‘are you sure?’ helps affirm this notion.

6.2.2. Tana FM

Sense of community

Tana FM’s policy denotes five objectives of the station; to inform, educate, promote dialogue, advocate, and entertain. Galana Galole (Tana FM) states that these factors “bring people together to communicate and educate, and find a solution when a misunderstanding occurs.” One way in which the radio promotes a sense of community is through the celebration of different tribal cultures. Peace songs sung in the mother tongues of the various tribes represented in the Tana River County are a regular feature in radio shows. Another way is through the greeting sections of shows, whereby members of the community can call the station and send greetings to friends elsewhere in the county.

Production of knowledge

According to a survey Chris Tuckwood and Drew Boyd (Una Hakika) conducted, radio is considered the most trusted media outlet in the Tana region. This makes the station an effective medium through which knowledge can be produced and engaged with by listeners. Most radio shows have an interactive element whereby:

“People call in and contribute. For example, when you have a peace programme, you let people call and give their views. You can hear very wonderful conversations where people come together and they share ideas” (Galana Galole, Tana FM).

Here the listeners are encouraged to critically engage radio content and call-in to discuss the topic and share their own thoughts on the matter. Knowledge is thus co-produced between listener and programme producers/radio presenters to further the discussion on the topic at hand. The production of content is itself informed and contributed by actors from the community. The station encourages a policy of ‘giving the mic away,’ so that it is the voices from the community that are heard on the radio, sharing their views on issues and providing information for others to hear. In this sense, then, the community also plays a part in shaping the content of radio programmes; providing news, verifying information, giving insights into different matters and setting the discourse for issues at hand. Such a set up enables opportunities for the station to operate in an educative capacity.

In regards to promoting peace and cooperation in Tana River County, Zeinab Hasan (Tana FM) observes that a high proportion of Tana FM listeners are youths, and that “it is the young people who are fighting.” Over half of the Tana FM staff talked about the unique opportunity the radio had to reach these younger listeners and educate them on the impacts of conflict and importance of cooperation. Involving the youth in the production of radio content and designing programmes that were tailored for younger audiences was seen as particularly important. Tribalism was mentioned as a primary issue to be addressed, particularly in the run-up to the elections.

Information gap

In a similar sense to Una Hakika, Tana FM is seen as filling trying to fill the information gap:

“We don’t have a good source of local knowledge, as the next closest radio station is in Nairobi or Mombasa. But Tana FM is now known in the county and people know that Tana FM is a place you can go to find out what is going on in the county” (Brian Maro, Tana FM)

Likewise, the station is also seen as a countering misinformation and rumours in the area, albeit less targeted and responsive than Una Hakika. Fatma Mzee (Tana FM) notes that people don’t know what is going on locally, nor understand why certain events or processes are unfolding in the way that they are. The radio can therefore be used as a vehicle to deliver community updates and counter misinformation and rumours – a trusted source of information for people to refer to.

Advocacy

Another key role of the station is advocacy. Through the radio, it possible for community issues to be discussed and promoted:

“One thing Tana FM can do is lobby on behalf of the community’s needs. Different voices coming together and making suggestions for how to improve the county and its community issues through the radio is very powerful” (Brian Maro, Tana FM).

Here Brian Maro elucidates the role of the station as a channel through which the community can advocate for different issues. By bringing voices of the community together, Tana FM can act as a platform through which these voices are amplified and channelled. As well as calling for change through the radio, it can also contribute to the sense of community, as people come together to promote interests and concerns on each other’s behalves. Knowledge plays a central role in advocacy, as advocacy is dependent on different perspectives coming together to provide a range of relevant information. The combination of knowledge can then create a shared

understanding and way for the community to position itself in order to move forward and take action.

On-air/off-air

The station operates under an on-air/off-air programme policy. This means that information communicated on-air is co-ordinated with services, events and actors off-air. For example, during a minor cholera outbreak in Hola where the station is located, information on hygiene practices to avoid catching cholera was broadcast on-air. At the same time, the station linked up with the local hospital to get more in-depth information and contribute to a strategy designed to prevent the spread of cholera and ensure effective treatment to those infected. Through planning with the relevant stakeholders on the ground, the radio was able to provide a commentary on the current status of the outbreak, the necessary hygiene practices to reduce risk of infection, and where to go in case you became infected. The on-air/off-air policy thus ensures that information broadcast on-air is grounded in practical information and services off-air.

The on-air/off-air policy also complements the community radio's role in advocacy. Working with people on the ground off-air in tandem with advocacy on-air can bolster the campaign and help the desired change to become realised in actuality.

Coverage

Reporting on conflict requires sensitivity, particularly in regards to tribal affiliations:

“In Kenya it is important not to report about tribes. We do not say, ‘one Pokomo has been killed and two Ormas killed,’ no, we are supposed to say only ‘three people have been killed’. Because once you get deep into the tribes there will be retaliation” (Fatma Mzee, Tana FM).

Sensitising the listeners and depoliticising the reports by removing information pertaining to people's tribe was understood as an important step in providing appropriate news coverage. Fatma Mzee makes the case that providing such information could lead to further violence, eluding to the responsibility the station has and the power information and knowledge has to contribute to conflict as well as cooperation. By setting the discourse in such a way, however, it can be argued that talking about conflict in non-tribal terms encourages listeners to do the same. This resonates with earlier discussions regarding collective discourse – the predominant discourse played on the radio, and the more tribal discourse heard in private settings.

Change in attitude

One of the main goals for Tana FM is behavioural change, whereby conflict ceases and community actors live in cooperation with each other. This process begins with changes of attitude, as Galana Galole (Tana FM) explains:

“Change does not come in a day, it takes time. But little things have changed, and the important thing is to change the attitudes of the listeners ... I think we have witnesses – they have listened to Tana FM and have changed their attitudes. So at least I can say a little has changed. But don’t expect much as we are only a year old”

Here Galana Galole (Tana FM) captures the nature in which knowledge is transforming the community. The “drip-drip” (as Zeinab Hasan, Tana FM coined it) of knowledge co-produced through the radio station leads to a slow but significant change in attitudes towards different issues covered. The evidence for this is entirely anecdotal – for example a teacher from a nearby school came to the station saying that a few children had recently joined her class because their parents had heard of the importance of education through Tana FM and decided to enrol their children. Measuring or assessing the impact of this ‘drip-drip’ effect is, however, difficult to carry out.

6.2.3. Radio programmes

Herders and farmers

The beginning of the programme focused on how farmers value their farms, and how herders value their herds. It described two conflict stories and the impacts they had on the actors. The programme then explored some of the more management orientated drivers – herd size, child herders, livestock in farms and compensation payment failure and the subsequent debt accrued. Dr. Mwamburi discussed the bill, which proposes the creation of new grazing areas for herders, and opportunities for cooperation between herders and farmers was talked about. Finally, the programme asks herders and farmers for their opinions on how to step forward and live in peace with each other.

During the call-in session the overwhelming message from listeners was that herders and farmers needed to respect each other and their property. With the exception of one caller, respect was mentioned every time. The majority of callers also mentioned the negative impacts of conflict, each urging the community to live in peace and not resort to violence. Around half of callers made comments regarding management of herds or the issue of livestock on farms. For example:

“If adults controlled the livestock instead of children, then I think there would be less conflict. The kids spend their time playing and don’t know when the cattle are destroying crops or not. When they see that happening, they run

away and that's when the problems occur. They should stop letting kids graze the livestock" (Call-in H and F, #5)

Callers thus offered different opinions on the herders and farmers drivers and theme more generally. In doing so, they critically engaged with the information and, in turn, led others to engage with their perspectives through their contributions. Together these voices added to the social learning process that was occurring amongst the community via the radio channel of communication.

In short, the programme had both informative and educative elements for listeners to engage with. The core issue, according to the listeners who called in, is the need for respect of each other and each other's property.

Proverb exchange

This programme centred on the exchange of proverbs from different tribes' mother tongues (as described in Box 1 in Chapter 5.3.1.). The theme the programme addressed was that of tribalism, with the show designed to celebrate tribal cultural diversity. At the beginning of the programme, the participants introduced themselves, their tribes and gave a message of peace. Without instructing participants to do so, dialogue was held entirely in a collective discourse, i.e. 'we the people of Tana River County.' Discussing tribalism in a collective discourse promoted this sense of community whilst situating tribalism within this collective context. The spatial distance between tribe member and the 'Other' from a rival tribe (Said, 1979) was therefore reduced, and the differences between tribes moved from pertaining qualities of the dangerous unknown (Campbell, 2007), to being topics of interest and intrigue.

The show was intended to be informative and humorous, as participants struggled to correctly pronounce the words from proverbs of the other mother tongues. This created a sense of intimacy between participants as they laughed and helped teach each other how to say the words and what they meant. The proverb exchange programme was designed in such a way that it is easily repeated with new participants in the same format, with the intention being that it became a weekly feature on the radio.

Rumours

The programme featured six stories of rumours and conflict, interspersed with a more conceptual discussion on the role of rumours in conflict, the importance of engaging with rumours and getting verification rather than believing or ignoring them, and dealing with rumours during the run-up to elections. The aim of the programme was to highlight the relationship between rumours and conflict, and encourage a culture of critical engagement with rumours.

During the call-in session, many listeners made comments about the impact of rumours on conflict and social learning was clearly exhibited. The main topic of discussion was how people handled rumours when they first heard them. One listener described how they have a tendency to believe a rumour when they first hear it, whereas three listeners reported the opposite – that they never believe rumours, for example:

“I don’t trust rumours one bit, as they can cause conflict over something you are not sure of. I advise all Tana River people not to listen to rumours until we are sure whether they are true or not. This will help us learn to depend on each other before anything bad will happen in the future” (Call-in Rumours, #6)

Here Call-in #6 adds to the discussion, urging fellow listeners not to trust unverified rumours. The caller elicits the divisive nature of rumours, and argues that developing critical attitudes towards rumours will help increase trust across the community. Again we witness here social learning in progress. The majority of listeners agreed that verifying rumours was important, and one listener argued that speed is a key factor in an effective rumour response, as people could be operating on false information until verification is acquired. Each listener thus demonstrated a self-examination in regards to their own approach to handling rumours, and what the best practices are in light of the programme’s messages.

6.3. Drivers and knowledge

This chapter brings the findings from Chapters 6.1. and 6.2. together to understand how the drivers of conflict and knowledge interact with each other, relating specifically to sub-research question 2: In which ways does knowledge interact with and impact the drivers of conflict? Table 2. (below) is used to help explore this question, followed by a discussion of the findings.

The first column in Table 2. displays the drivers of the conflict from the three themes (herders and farmers in green, tribalism in blue, and rumours in red), and the second column makes suggestions for possible solutions to these drivers. The third column takes the findings from Chapter 6.2. and considers them in relation to each driver. The final column then assesses the significance of knowledge in regards to that particular driver. The significance is classified as either limited, moderate, or high.

Driver	Possible solutions	Role of knowledge	Significance of role
Livestock in farm	Improve governance mechanism, education and advocacy	Educate people on the impacts of conflict, educate herders and farmers on measures to prevent damages	Limited, trust has been lost due to repeated failure to pay compensation
Access to water	Re-establish malkas	Advocate on behalf of herders for management to address the situation, inform stakeholders of their legal rights	Moderate, situation needs attention and the radio could raise awareness, though inhibited by contestation over land rights
Lack of grazing areas	Increase the grazing areas (proposed in a bill currently under consideration)	Advocacy on behalf of stakeholders	Moderate-high, raising awareness and bringing the bill to the attention of the community could have a big impact
Herd management	Educate herders on best management practices	Education	High, poor roads and render education opportunities limited. Radio is an easily accessible medium to provide such education
Nomadism	Educate people on different practices	Advocating cultural sensitivity, educating people on different practices	Moderate, not a lot that can be done other raising awareness in regards to different cultural practices which radio is well-suited for
Governance and corruption	Introduce and affirm a new culture of governance	Advocating honest governance practices	Limited, this driver has become institutionalised and tackling it is a major difficulty
Debt	Financial schemes to help support farming	Informing people of the difficult situation many farmers are in	Limited, needs intervention from government
Lack of cooperation	Sharing goods between herders and farmers, post-harvest fodder for cattle	Informing and advocating cooperative practices between these groups	Moderate, could encourage cooperation to occur, but the main issue is lack of trust
Lack of education	Educate herders and farmers on best	Education	High, poor roads and render education

	management practices		opportunities limited. Radio is an easily accessible medium to provide such education
Fixed identities	Re-thinking identities beyond tribal and livelihood affiliations	Education, advocacy	High, radio sets the discourse and can encourage the community to re-evaluate itself and attitudes towards others
Collective discourse vs. tribal discourse	Encourage people to move beyond tribal thinking	Challenging people to assess their identities	High, collective discourse on the radio can encourage people to speak and think in such terms. Ability to target and educate youth
Politics	Educate people on voter rights, advocate for free elections, institutional arrangements to ensure free elections, security	Education and advocacy on the need for free elections and voter rights	Moderate, radio is the main voice in the community and can inform people on their rights encourage appropriate behaviour. Dispelling misinformation via the Una Hakika network also pivotal
Tribal conflict	Education, institutional arrangements, security	Non-tribal coverage, education, information	Moderate, in times of conflict news reports from the radio are the main source of information. Non-tribal coverage and information can help prevent tribal conflict. Ability to target and educate youth
Rumours	Rumour verification, education	Verifying rumours, countering misinformation	High, Una Hakika network can provide accurate information and help prevent rumours from spreading
Information gap	Presence of local media	To be present and accessible for as much of the community as possible	High, local media such as community radio and Una Hakika allow people to access information about local issues and affairs

Table 2. Role of knowledge in relation to drivers of conflict

Knowledge plays a moderate-high level of significance in driving cooperation in 66% of the herders and farmers themed drivers, whereas knowledge has a limited significance in the remaining 33%. For the drivers with a moderate-high significance, the role knowledge plays is either in education and/or advocacy. The radio station could have a big impact in an advocacy role, for example, on the current bill in the County Assembly that proposes the creation of new grazing areas. Bringing this bill and the various advantages and disadvantages it may bring for different stakeholders to the attention of the station listeners could have a strong influence on the decision-making process. Indeed, only 3 respondents out of everybody who was spoken to had any knowledge of the bill at all. Education is another key role knowledge plays, particularly significant because of the lack of other opportunities for education in the region. Radio's easily accessible technology makes it a potent platform for facilitating social learning in this respect.

The significance of knowledge for the Tribalism themed drivers is high for the fixed identities and Collective discourse vs. tribal discourse drivers, and moderate for Politics and Tribal conflict drivers. The first two drivers with a high significance are closely related and identity-based, with collective discourse utilised on the radio to assert a new non-tribal language that challenges notions of fixed identities, 'them' and 'us.' The role of knowledge for these drivers is predominantly that of the 'drip-drip' effect whereby changes in attitude occur through promoting certain ideas or agendas over a long period of time. Whilst categorised as having a high significance, assessing the impact of this is a difficult task to complete with any degree of certainty.

For the other two tribalism themed drivers, the significance was categorised as moderate. The role knowledge plays in regards to politics is largely informative – telling listeners what their rights are, encouraging a free election etc. In the absence of other local media, Tana FM will likely be the main voice the community refer to for information during the run-up to the next elections. Similarly, during episodes of violent conflict in the Tana River sub-County it is Tana FM who people refer to for information. Coverage is therefore key, and Tana FM can provide information and promote peace to try and prevent Tribal conflict from occurring. A range of other contextual factors will also come into play, however, and it is difficult to ascribe a higher level of significance to knowledge in regards to this driver because of this. Having said that, the radio's ability to communicate with its high base of young listeners could have a high impact in this respect.

Finally, the rumours themed drivers both have a high level of significance. The Information gap leaves an open space for misinformation to propagate, particularly in the form of rumours. Knowledge thus has a high significance as it is, in some sense, the only way through which these drivers of conflict can be counteracted. By

both being active and easily accessible within the vicinities they operate, both Una Hakika and Tana FM have sought to become trusted sources of local media that effectively fill the Information gap. For rumours, Una Hakika's rumour verification service attempts to dispel the circulation of misinformation through the production of verified information. Furthermore, it encourages a critical engagement with rumours so that people do not simply believe or dismiss rumours when they are heard, but proactively seek out verification.

6.4. Results summary

What role does knowledge play in driving cooperation in the Tana River County resource conflict situation?

What are the drivers of competition and cooperation behind the conflict as defined by the different actors?

Ten herders and farmers themed drivers were identified. Out of these ten, livestock in the farm, access to water, lack of grazing area, herd management, and governance and corruption were considered the most significant.

Four tribalism themed drivers were identified. These consisted of fixed identities, collective discourse vs. tribal discourse, politics, and tribal conflict.

Two rumours themed drivers were identified. These consisted of the information gap, and rumours.

In which ways is knowledge utilised as a driver of cooperation in Una Hakika and Tana FM?

Una Hakika utilised knowledge as a driver of cooperation primarily in two ways. First, through providing a Trusted flow of information, Una Hakika verifies rumours for service users within their network. Second, through educating users on the impact of rumours and making use of the service, a change of attitude in regards to a more critical engagement with rumours is encouraged. Tana FM utilised knowledge as a driver cooperation primarily in five ways. First, the Production of knowledge of amongst actors through the radio station is seen as a key tool that provides opportunities for education, particularly relevant for its high base of young listeners. Second, interactions on-air and information tailored for the community instils a Sense of community amongst the tribes and communities within the broadcast area. Third, knowledge channelled in an Advocacy role enables different voices from the community to come together to push for certain issues. Fourth, Coverage of local events and affairs enabled the station to set the discourse on issues such as tribalism, encouraging particular ways of thinking and approaching these matters.

Finally, the station also tried to create a change in attitudes through the 'drip-drip' effect, whereby listening to and engaging with the radio over a long period of time leads to changes in thinking.

The three radio programmes provided two main findings. First, investigating the drivers of conflict in the Herders and farmers programme, and the rumours programme, gave opportunities for social learning to occur. The call-in sessions gave clear indications of social learning, and enabled callers to contribute to the education process themselves through the co-production of knowledge. Second, the Proverb exchange programme highlighted the importance the radio's ability to set the discourse. Through exploring different tribal cultures in a collective discourse, learning opportunities that serve to reduce the spatial distance between 'us' and 'them' were created.

In which ways does knowledge interact with and impact the drivers of conflict?

Out of the 9 Herders and farmers themed drivers, the significance of knowledge was deemed limited for 33% and moderate or high for 66%. For this latter group, knowledge played a role predominantly through advocacy and/or education.

For the tribalism themed drivers, the significance of knowledge was deemed to be high for the fixed identities and collective discourse vs. tribal discourse drivers. The role knowledge played for these drivers was one of setting the discourse and establishing changes in attitudes through the 'drip-drip' effect. For the Politics and Tribal conflict drivers, the significance of knowledge was deemed moderate. The role knowledge played here was largely an informative one, with the coverage of information being especially relevant to address these drivers.

The significance of knowledge for the rumours themed drivers was deemed high. This is because the role of knowledge was itself the only real counter-measure to the propagation of misinformation, with the rumour verification service provided by Una Hakika considered an effective targeted response to this driver. Additionally, education and rumour verification can encourage a critical engagement with misinformation and lead to changes in attitude.

7. Discussion

7.1. Situating the role of knowledge in the conflict context

Chapter 7.1. 'paints the picture' of the conflict, locating the findings of the research regarding the role of knowledge in driving cooperation within its resource conflict

context. First it considers the drivers of conflict in relation to Deutsch's (2014) characteristics of cooperative/competitive relations. It then elicits the findings of the research, and reflects upon them in relation to current literature.

The first characteristic Deutsch (2014) looks at is communication. It is difficult to comment on the communication between herders and farmers, as they have contrasting relationships depending on the people and their involvement with the other party. Where there is impairment, however, Tana FM is trying to help remedy that by offering a line of communication through which herders and farmers can both participate. Friendliness between actors exists, but there is very little trust. This distrust stems mostly from failure in the legal mechanism to ensure compensation is paid when damages occur to crops or livestock. As a result, opportunities for working together are not fully explored, and cooperation is somewhat limited. According to the majority of respondents, the key characteristic that is lacking in this management scenario is respect for each other's needs. Damage is caused to the other person's property largely because each party considers their crops or livestock more valuable than the other's.

The lack of willingness to enhance each other's power sheds some light on how other factors influence the resource conflict. Operating at a wider scale is tribalism, which, when read through a tribal lens, sees the conflict as a competition over resources between Pokomo and Orma/Wardei/Somalis. Despite many examples existing of herder Pokomos farmer Orma/Wardei/Somalis, the majority of respondents saw the contest within this paradigm of fixed identities. The question of power then becomes important, as the struggle for power is transferred to and realised on the political stage. Tribal thinking lends itself to the notion that the tribe from which the Governor of the county belongs (currently Hussein Dado of the Orma tribe), is the tribe that, in effect, is in charge and has power over the other tribes. Consequently, the elections are a deeply contested, personal and often violent affair. The feeling of tribal 'superiority' then feeds down to the farm scale, with Orma/herders feeling empowered at the expense of Pokomo/farmers.

One way in which both parties could define their conflicting interests as a mutual problem is to address the ineffectiveness of the current legal mechanism that is designed to ensure compensation payment. Conflict stories of both parties failing to receive compensation were heard. Almost every herder and farmer acknowledged this when questioned; yet the majority of respondents allocated the main cause of the conflict to other things. These included the management of herds, inability to easily access the river, and tribal stereotypes. Fundamentally the legal mechanism is a failure in governance, an issue affected by corruption. This is a problem in itself that runs systemically throughout all aspects of life in Kenya (Kimuyu, 2007) and

tackling corruption in the context of this resource conflict is not an easy task to accomplish.

Finally, the acceptance or rejection of ideas in regards to either party is virtually non-existent due to the Information gap. The lack of local media throughout most of the Tana region renders the area “information poor” (Megwa, 2007:337). In this context, the exchange of ideas is severely limited due to the absence of available channels of communication through ideas can be shared. This absence, instead, gives way for misinformation to propagate in the form of rumours. Conflict can often arise, then, when people act upon this misinformation. Both knowledge-based initiative Tana FM and Una Hakika are aiming to fill this Information gap through providing media tailored for the local community and a targeted and responsive rumour verification service. This is perhaps the most immediate role knowledge has in driving cooperation in the Tana River sub-County.

Another way in which knowledge is utilised within the context of this Information gap is through education. In particular, opportunities for education on how to work towards cooperative relations between stakeholders in the situation of resource conflict are limited. Poor road quality and networks make transport difficult and there is also a lack of funding to accommodate education initiatives. The community radio as a vehicle for educative purposes is therefore able to transcend these barriers. With the proliferation of FM technology widely available through mobile phones and radios, radio can operate as the ideal platform to disseminate and produce educative knowledge. Furthermore, with its wide base of younger listeners and its ability to communicate with people who have little to no literacy skills, knowledge is able to reach various groups across wide distances and social learning can occur. This finding corresponds with Ranganathan and Sarin’s (2002) paper, which looks at community radio as a platform for education. In regards to resource management literature, however, whilst Tippett et al. (2005) comment on the need for accessible channels of communication for social learning, community radio as a medium for social learning has not been explored. Pahl-Wostl (2002) highlights the need for participation in order for social learning to occur, a key component in community radio. Social learning through the community radio medium thus warrants further research, especially in regards to resource conflict.

Advocacy was another role knowledge plays in driving cooperation. The community radio provides a channel of communication through which different voices from the community can come together and push for certain issues to be addressed in particular ways. This can be seen in the example of the lack of grazing areas driver. The bill that is currently being considered in the County Assembly that proposes the creation of new grazing areas was discussed in the Herders and farmers programme (see Chapter 6.2.3). Through a series of on-air discussions, the merits of the bill could

be explored further, and depending on the community's response, the station could advocate on their behalf for changes to be made. Working alongside stakeholders off-air allows the station to be even more effective as an advocate, bolstering and amplifying the on-air voices.

Setting the discourse is another way in which knowledge was utilised as a driver of cooperation. A certain 'collective' discourse was observed that is premised on the notion of a shared sense of community that incorporates the various tribes of the Tana River County. The use of language was particularly pertinent, with 'we' – heard on Tana FM – working to reduce the spatial distance found between the 'them' (rival tribe) and 'us' (our tribe) that is typical of tribal discourse heard more commonly in informal settings. The ability for community radio to challenge hegemonic discourses is documented in Carroll and Hackett (2006), with Tana FM – consciously or not – striving to subvert tribal discourses through the use of this collective discourse. Further, Haslam (2006) contends that the process of dehumanisation is rooted in everyday social phenomena and language. This suggests, then, that offering an alternative discourse can serve to the opposite effect. Programmes such as the Proverb exchange can therefore work to rehumanise this tribal 'Other,' and reduce the space between 'them' and 'us.' This sense of community was further realised through the co-production of knowledge, whereby listeners would actively call-in and contribute to discussions live on air. A multi-directional flow of information was thus established, with participants sharing viewpoints and informing each other's perspectives. This finding corresponds with Pahl-Wostl et al.'s (2007) conclusion that the production of knowledge builds trust between stakeholders.

Coverage is the final way in which knowledge played a role as a driver of cooperation. It was found that during times of conflict in the community, Tana FM was the media people turned to in order to get information about the conflict. How coverage is provided and the how the information is presented is thus crucial to encourage peaceful responses to the recent events. In particular, pushing a non-tribal discourse can help prevent further Tribal conflicts from occurring. Effective coverage also helps reduce the impact of rumours, as being a present local media helps fill the information gap with more trusted and verified information. Whilst difficult to assess, anecdotal evidence supports the notion that attitudes towards certain issues were being changed via what one respondent coined the 'drip-drip' effect. Essentially, this effect consists of attitudinal change occurring due to regular engagement with the community radio over a long period of time.

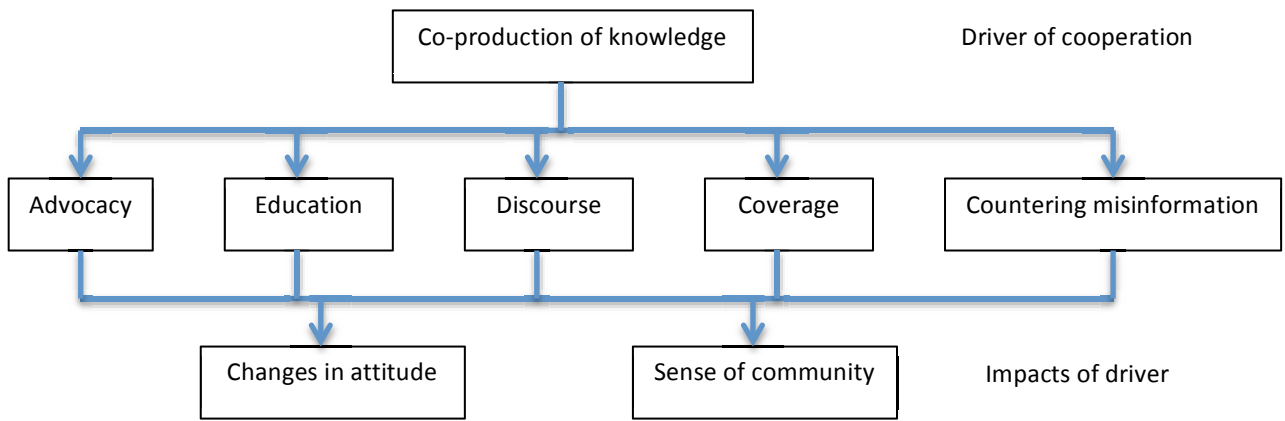


Figure 5. Five main roles of knowledge as a driver of cooperation and their impact

Figure 4. visually conceptualises the role of knowledge as a driver of cooperation. Through the co-production of knowledge, knowledge can be utilised in the five ways highlighted: advocacy, education, discourse, coverage and countering misinformation. These five roles then drive cooperation in two ways, first: Changes in attitude, particularly through regular engagement with Tana FM and Una Hakika over a long period of time, referred to by Zeinab Hasan (Tana FM) as the ‘drip-drip’ effect. Second, through building a Sense of community – particularly in regards to Tana FM and its ability to set the discourse in regards to tribalism and providing Coverage.

Driver	Hydrological?	Significance of knowledge	Comments
Livestock in farm	Yes	Limited	Knowledge has limited impact
Access to the river	Yes	Moderate	Knowledge could be utilised in an advocacy role
Lack of grazing areas	Yes	Moderate-high	Knowledge could be utilised in an advocacy role, particularly relevant due to the current bill
Herd management	Yes	High	Knowledge utilised in an educative role, particularly relevant due to the absence of other educative avenues
Governance and corruption	No	Limited	Knowledge has limited impact
Tribalism	No	Moderate-high	Knowledge utilised in a drip-drip effect over a long period of time
Rumours	No	High	Knowledge utilised in a targeted, effective and response manner

Table 3. Role of knowledge considered in relation to most significant drivers

As seen in Table 3., knowledge has a moderate to high significance in regards to three of the four hydrological drivers of conflict. This suggests that knowledge has an important role to play in the resource conflicts in the Tana River County. This observation supports the notion that the role of knowledge in resource conflict more generally is an under-researched driver of cooperation, and deserves further investigation. The hydrological drivers were largely influenced by the tribalism drivers that were operating at a more regional scale. The influence the tribal drivers have on the conflict should not be understated, and the impact knowledge can have on this driver through setting the discourse is thought to be significant, though difficult to assess to what extent. Again, this is a field that warrants further research in resource conflict literature.

7.2 Limitations of methods

This section discusses the limitations with the research methods and analysis.

7.2.1. Radio programmes

One limitation for the radio programme method is that the quality of the programme is reliant on available radio production skills. Listening to interviews, identifying the drivers through the storyline approach, assembling recordings into a meta-storyline, writing a narration and then editing it together requires some pre-existing production knowledge. This already lengthy process was made much slower by the language barriers, as creating the shows required each recording to be carefully selected and put together so that the programme flowed well and made sense to the native speaking listener. Having taken this all into account, a further limitation was providing a balanced discussion in the meta-storyline. Favouring one side of the conflict over another would not be a sensible move to make, and as I couldn't understand Kiswahili and therefore couldn't 'hear' the programme from a native fluency, I had to rely on the judgement and discretion of the Tana FM staff. Finally, the radio programmes were limited some what by time. It would have been improved if the programmes could have been played more than once each, and organising follow-up interviews with callers could have been possible if time had allowed for it.

7.2.2. Semi-structured interviews

One limitation for the interview method was the language barrier. The most commonly spoken language is Kiswahili, and so the majority of interviews were conducted in Kiswahili and later translated into English. This made understanding what was being said during the interview difficult. In the process of translating one language into another, meanings of phrases, words, tones and so on can get lost, and the translated transcripts will never fully capture the richness of the interview as understood in its original language. Furthermore, for the majority of participants

Kiswahili was their second language after their tribal mother tongue. This meant that some interviewees struggled to articulate what they wanted to communicate because they themselves were limited by their knowledge of Kiswahili. In some instances interviews could be conducted in mother tongues, such as Pokomo and Orma, but as most of the interviews were intended for radio play and the aim was to capture the voice of the actors themselves, interviews had to be conducted in Kiswahili as that was the language that Tana FM broadcast in. The translation process into English that later took place was further limited by the translators' abilities in both Kiswahili and English.

Interviews intended for radio play were conducted and led by members of Tana FM whilst I took a secondary role in the process. This meant that interviews were limited by the skills and ability of the interviewer to conduct effective semi-structured interviews. As the interviewer also changed depending on who was available to work on a day-to-day basis, it meant that different interview styles also inevitably changed, eliciting different responses from interviewees. For both the purpose of research and radio play, this is not necessarily a bad thing, however, as the essential structure of the interviews remained consistent. From my perspective, though, not leading the interview meant I had little control over what points were pressed and investigated more thoroughly, and relevant details may have been missed because of this. Operating in such a way did have its advantages, however. Passing control to a Tana FM member allowed my presence as a white, British male to be minimised, and most probably allowed for more trust to be established between the interviewee and the familiar Tana FM staff member. It also allowed for more interviews to be conducted, as translation processes mid-interview didn't slow us down.

Another limitation of the interview process was the awareness respondents may have experienced concerning the use of the interview for radio play. Interviewees may have answered questions in a certain way that would have differed if it were being recorded for research purposes alone. Further, information may have been withheld during interviews, as respondents didn't want it publicly broadcast. Talking about sensitive issues was difficult for several interviewees, and a few expressed concerns for how to articulate in an appropriate 'radio-friendly' manner. The reverse was also true – two interviewees had to be reminded not to be too explicit when referring to tribes and people, or the interview would not be able to be used on air.

7.2.3. Focus groups

The focus group discussions were limited by the ability of the facilitator. Good facilitation will keep the discussion on topic and ensure that everybody is contributing. In practice, it is difficult to keep voices equally heard, with louder participants tending to dominate the discussion. The focus group discussions were

held in Kiswahili, though not all participants were fluent and consequently struggled to engage in the way they would have done had it been held in their first language. The discussion was recorded and later translated, and the same translation issues mentioned in the previous section were also applied to here.

7.2.4. Storyline approach

One limitation of the storyline approach is that identifying the drivers from the storylines is subject to the interpretation of the researcher. Whilst finding wide points of consensus is fairly straightforward, deciding on and making conclusions in regards to conflicting stories is harder to negotiate. In such cases there is a heavy reliance on the judgement of the researcher to make fair assessments of the diverging storylines. Another limit is that the storyline approach deals purely with perceived truths, rather than the reality of the situation. For the purpose of this research, however, the focus is on knowledge, which interacts with and informs perception and perceived truths.

8. Conclusion

To conclude, through applying the storylines framework, 15 drivers of the conflict were identified that could be categorised into three themes: herders and farmers, tribalism and rumours. These three themes operated predominantly at different scales, and interacted with each other in different ways. To explore and understand the different roles knowledge plays in driving cooperation, two lines of enquiry were pursued: one, interviews with staff members and users/listeners of Tana FM and Una Hakika were conducted, and two, through the production of three radio programmes that were played live on the community radio broadcast, with call-in sessions held afterwards. Using this data, the different roles knowledge plays were identified. These roles were then considered in regards to the conflict context as defined by the actors. It was found that knowledge played a role primarily through advocacy and education for the herders and farmers themed drivers, through setting the discourse and information coverage for the tribalism themed drivers, and through countering misinformation through the rumours themed drivers. Together, the five main roles knowledge plays in the Tana River County resource conflict served to drive cooperation in two ways: one, through creating changes in attitudes over a long period time via the 'drip-drip' effect, and two, through building a sense of community.

More research is required to understand the extent to which knowledge drives cooperation – a difficult variable to quantify. This study, however, has sought to contribute to the current discussion in literature through providing a study of the role knowledge plays as a driver of cooperation in the resource conflict in the Tana River County. It was found that knowledge plays a significant role in regards to the

majority of identified drivers of competition, and through Tana FM and Una Hakika, it works to drive cooperation in five main ways: advocacy, education, coverage, setting the discourse and countering misinformation.

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10. Annexes

Annex 1

Line-by-line codes

Access to water 16 (4.3%)
Respect 16 (4.3%)
Livestock in farm 13 (3.5%)
Child herders 7 (1.9%)
Rumours 22 (5.9%)
Lost animals 7 (1.9%)
Dry season 11 (2.9%)
Corruption 11 (2.9%)
Pokomo herders / Orma farmers 3 (0.8%)
Large herd 3 (0.8%)
The bill 8 (2.1%)
Fencing 5 (1.3%)
Nomadism 3 (0.8%)
Injured animals 5 (1.3%)
Cooperation 8 (2.1%)
Governance 29 (7.7%)
Conflict resolution 12 (3.2%)
Debt 4 (1.1%)
Tribalism 30 (8%)
Information gap 11 (2.9%)
Infrastructure 2 (0.5%)
Elections 18 (4.8%)
Damages 8 (2.1%)
Poko = farmer, Orma = herder 6 (1.6%)
Grazing area 2 (0.5%)
Natural resources 4 (1.1%)
Impacts of conflict 6 (1.6%)
Trust 6 (1.6%)
Tana FM 25 (6.6%)
Attitudinal change 8 (2.1%)
Coverage 5 (1.3%)
On-air/off-air 2 (0.5%)
Education 15 (4%)
Sense of community 6 (1.6%)
Una Hakika 20 (5.3%)
Land ownership 1 (0.27%)
Shared knowledge 16 (4.3%)
Time-space compression 2 (0.5%)