

# Response and Impact of drought on East African pastoralists: case studies from Kenya and Tanzania

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## Pastoralism in East Africa

- There are an estimated 30 million people practicing pastoralism in East Africa and the Horn of Africa
- The dry lands of East Africa have some of the largest pastoral populations in the world.

# Turkana- Maasai

- I have been conducting research in the East African rangelands for 37 years, much of this has had a focus on drought, the way people cope with drought and the way they recover from drought.
- Turkana in northern Kenya – land use and decision making
- Maasai in northern Tanzania- land use and livelihood diversification
- Each of these societies have institutions that both cope with drought and recover from drought.
- Coping primarily in terms of mobility, recovery in terms of livestock distribution.



Turkana

Maasai

# Pictures taken Feb.2017 Simanjiro District Tanzania

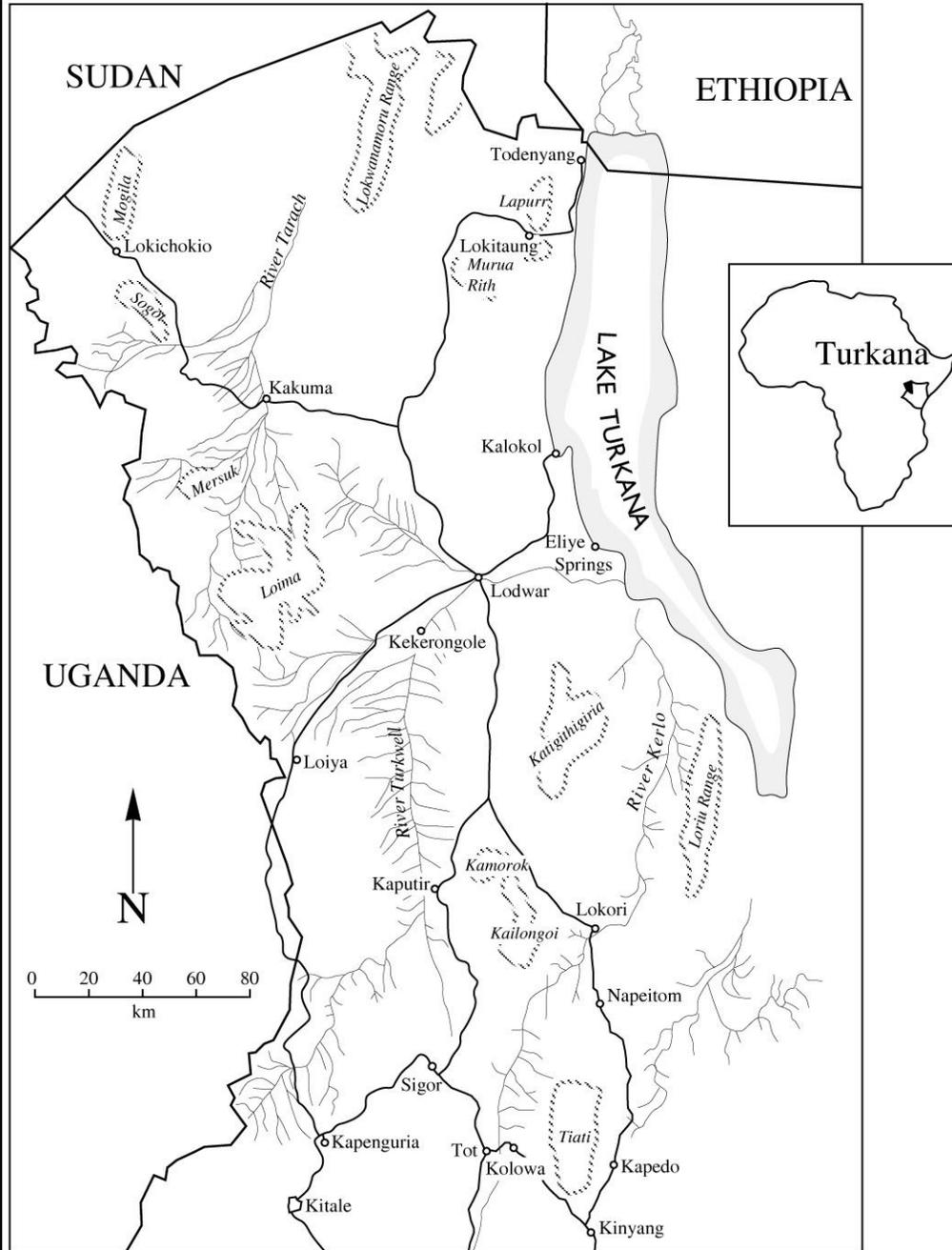


**As drought sweeps Kenya, herders invade farms  
and old wounds are reopened  
Threatened by famine, pastoralists have turned to  
violence**

**Drought to blame for invasion of ranches in Laikipia – Nkaisery**  
February 7, 2017 3:36 pm

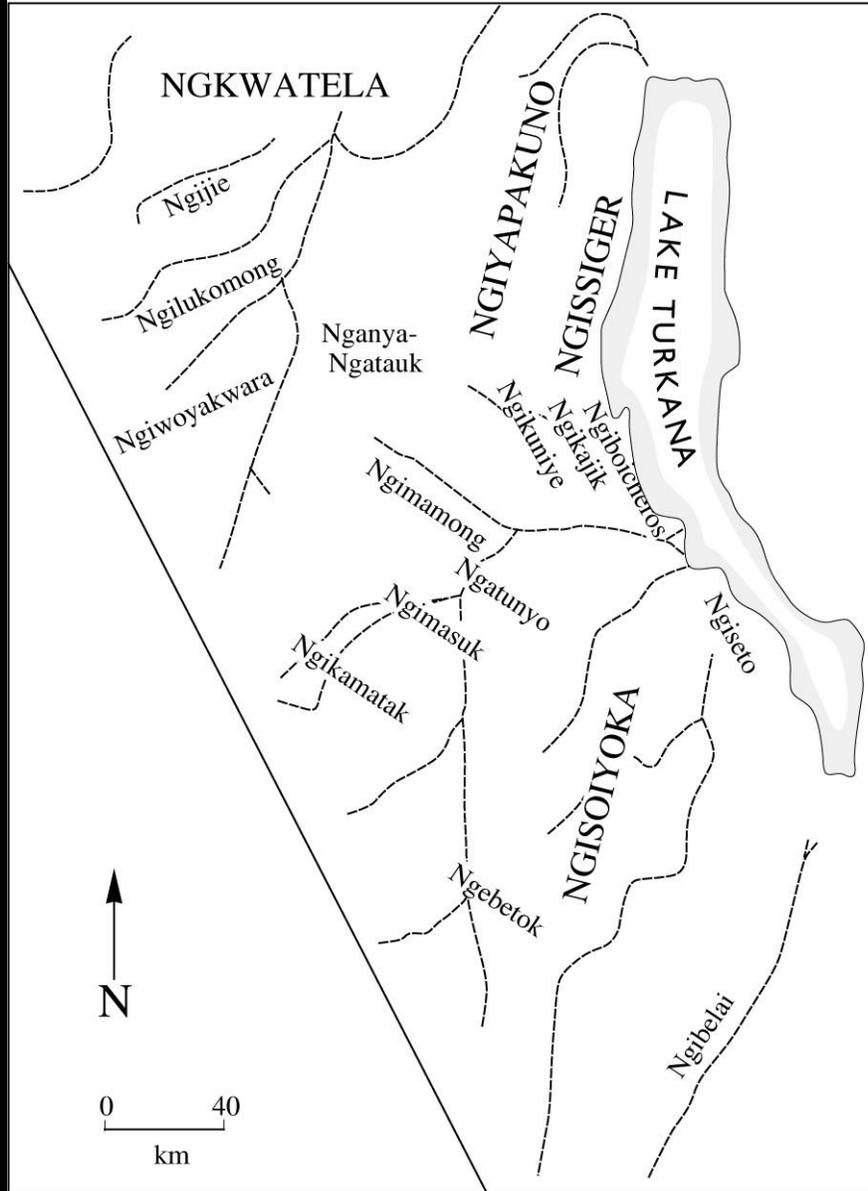


Map 1.1: Turkana District



source: McCabe, adapted from Soper, 1985

Map 3.1: Turkana Sections

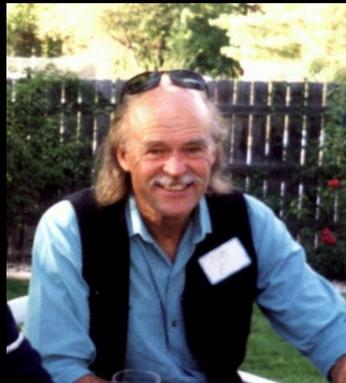


source: McCabe, adapted from Gulliver, 1951

The South Turkana Ecosystem Project began in 1980 and continued until the late 1990's.

“The South Turkana Ecosystem Project is one of the earliest and best exemplars of the marriage of first-rate ecosystems ecology research and sophisticated social science methods” Moran 2004

My research involved all aspects of land use and mobility over a 16 year period (1980-1996)



## Methodology

- Concentrated research on four families
- Lived with and moved with these families
- Detailed data collection on human and livestock numbers; livestock production; mobility (including numbers of moves per season and per year, motivation for moves). Data collection for 10 years
- Survey data collected throughout Turkana





## Livestock

- Camels
- Cattle
- Sheep
- Goats
- Donkeys

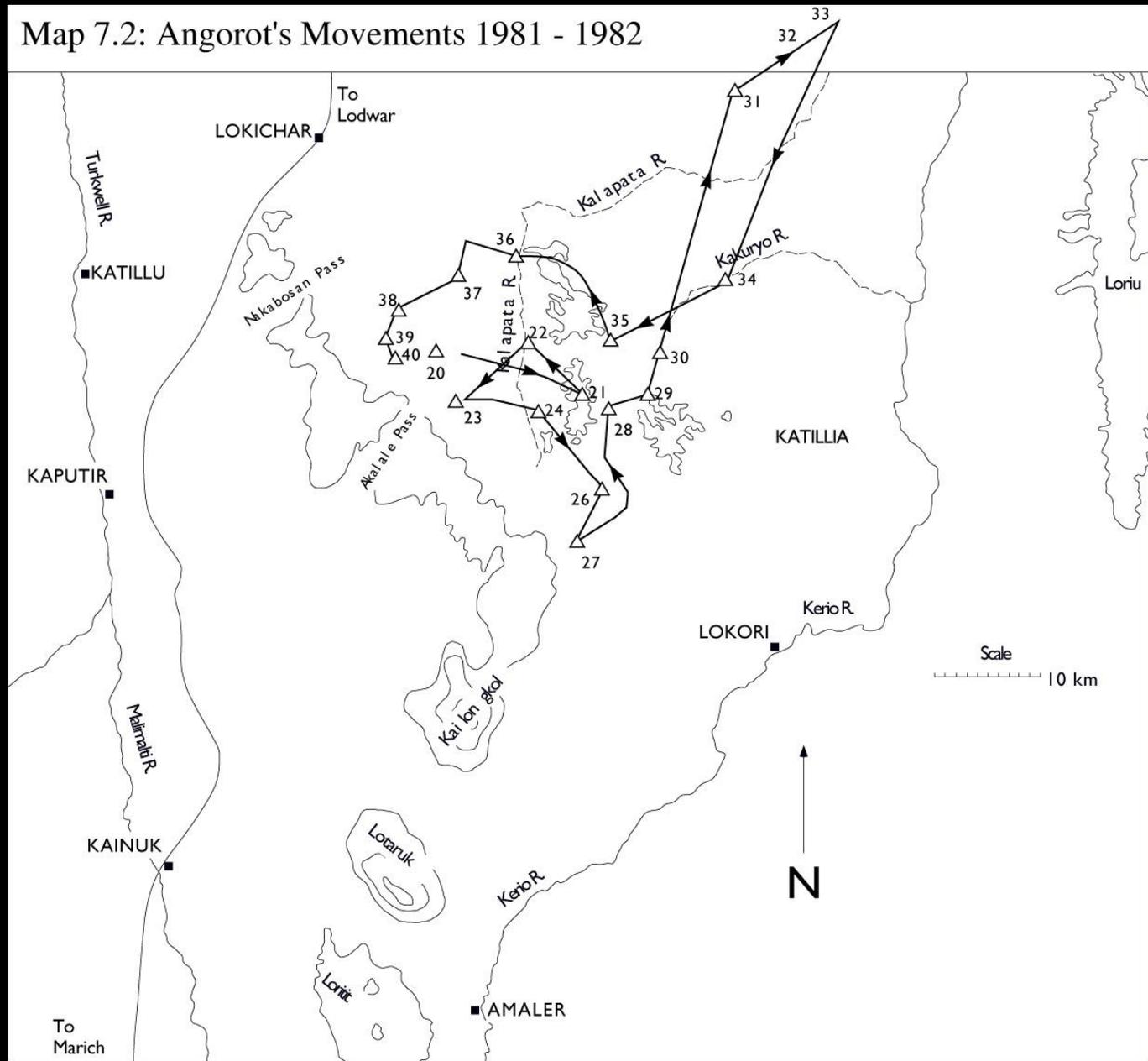
## Responses to drought

- Sell non resistant drought animals (cattle primarily)
- Dependent people move from poorer families to wealthier ones
- Sell animals (if price reasonable)
- Dependent people leave pastoral sector
- Eat dead animals –sell skins
- Some families leave pastoral sector

# Mobility

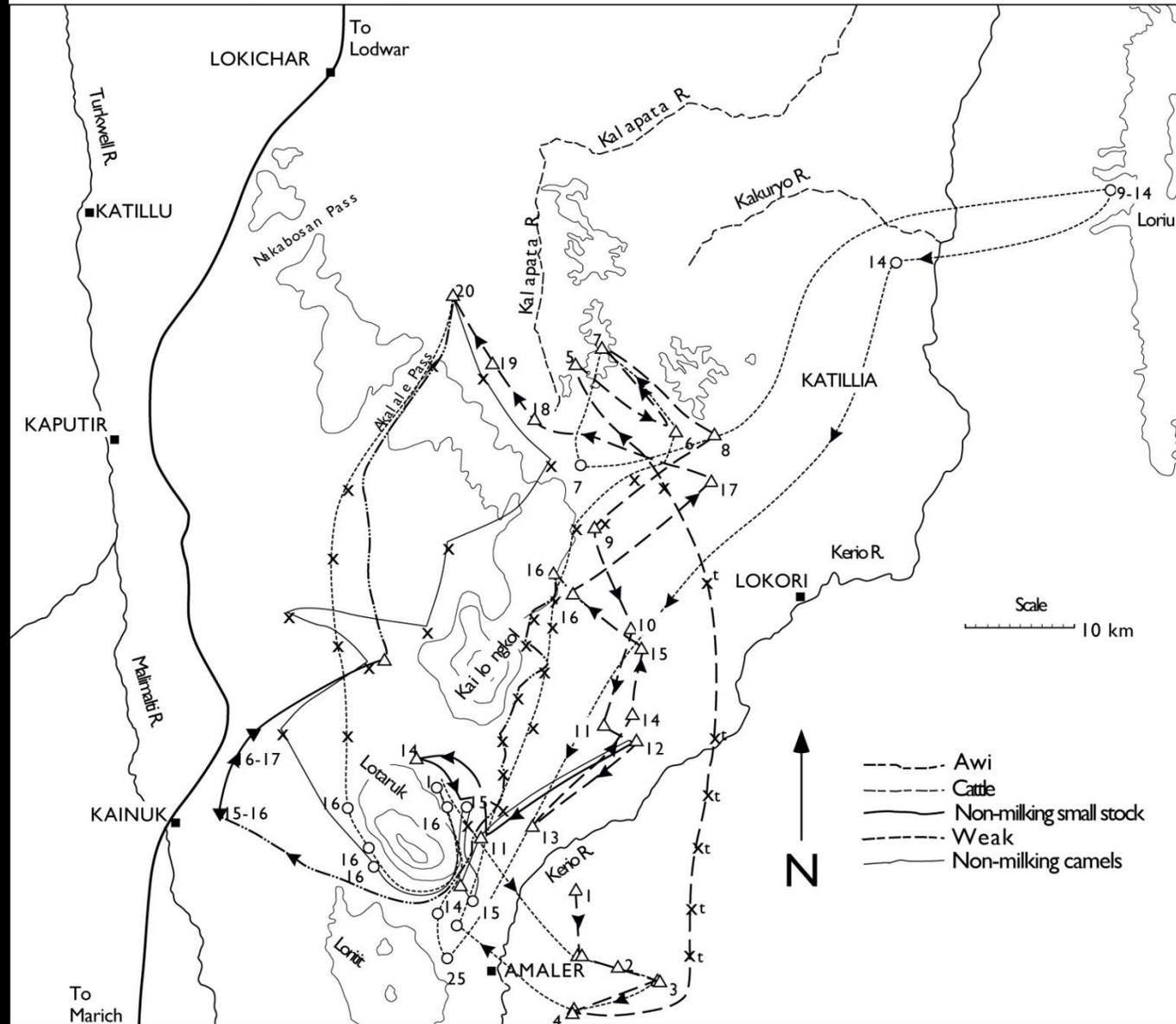
- Principle means by which Turkana adapt to spatial and temporal variability in the availability of resources
- Turkana are among the world's most mobile peoples with major homestead (awi) moving on average 10 – 14 times per year and satellite herds often moving more often
- Significant variability from year to year for each herd-owner; and among herd-owners within any one year

Map 7.2: Angorot's Movements 1981 - 1982



source: McCabe, original data

Map 7.1: Angorot's Movements 1980 - 1981 (Lochuu)

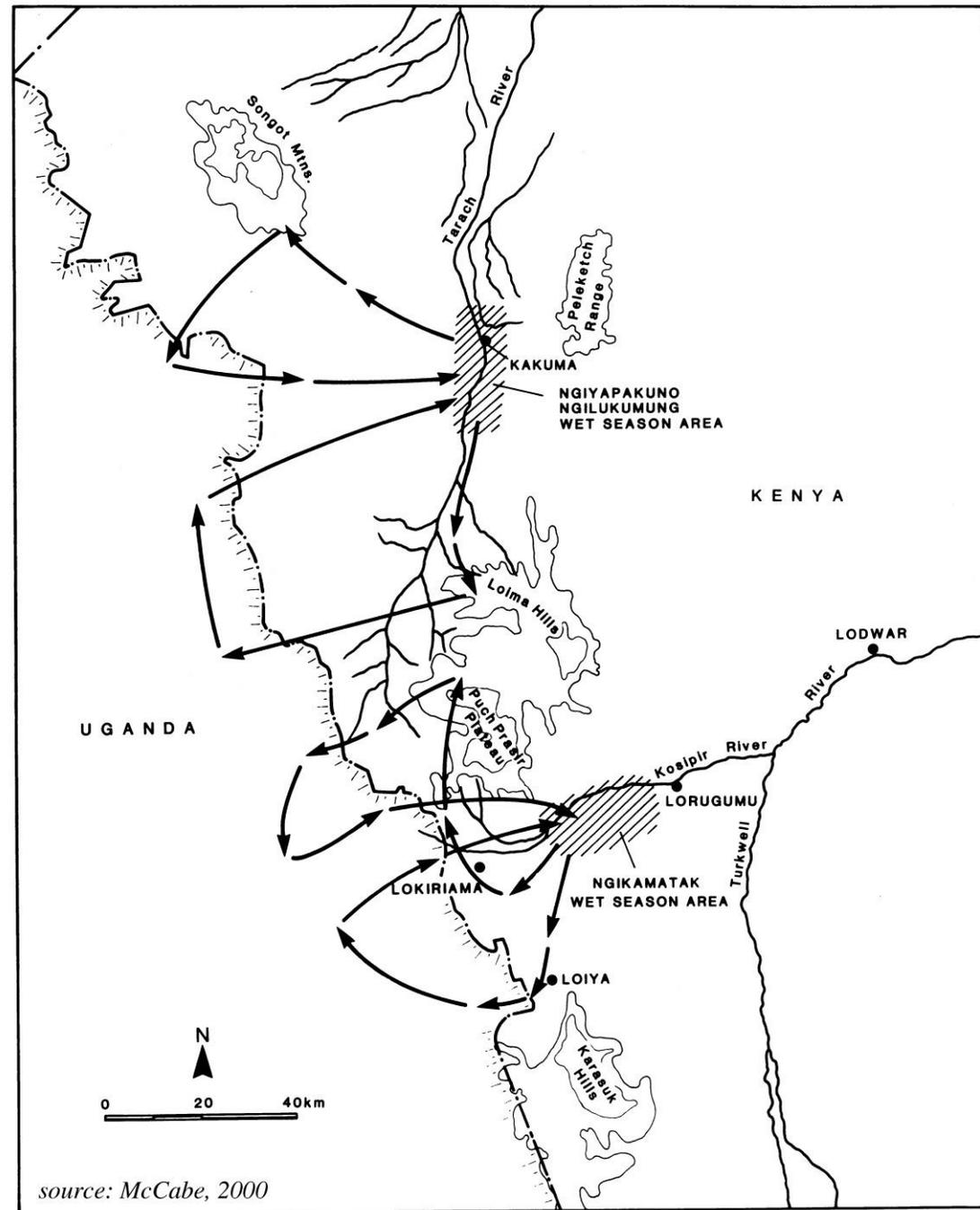


source: McCabe, original data

Season wells, right, are deep and mostly worked by women.

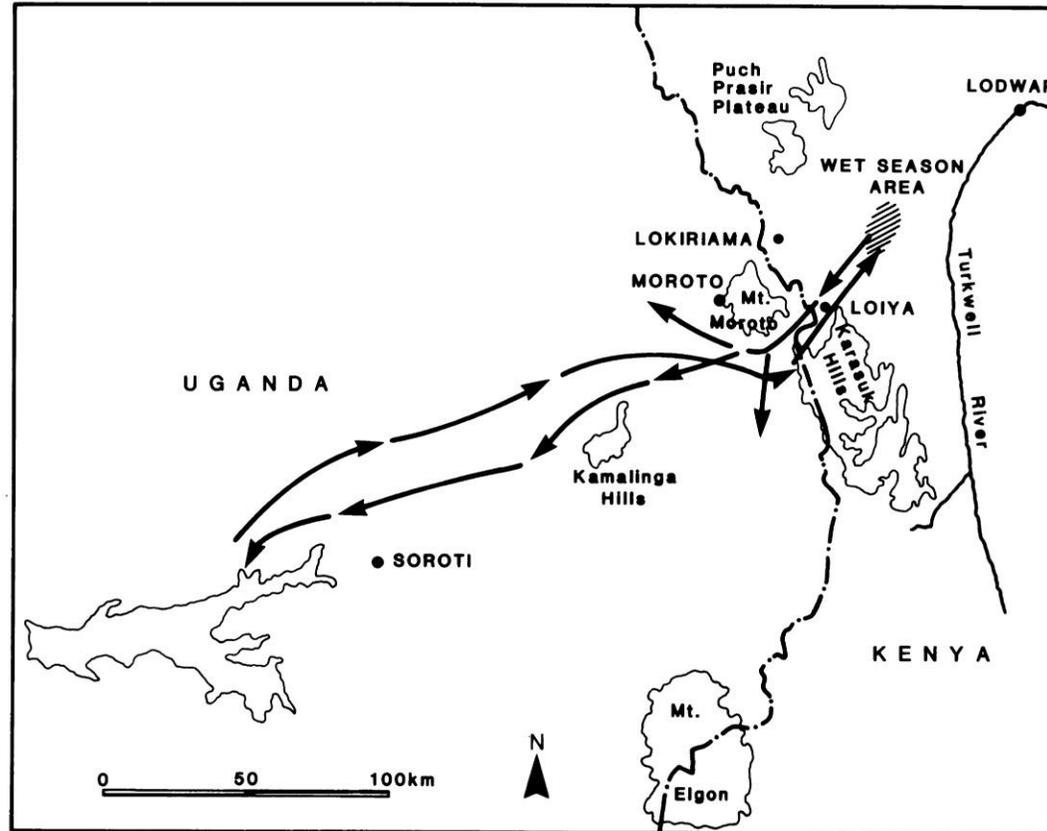


Map 10.2: Ngiyapakuno, Ngilukumong, and Ngikamatak - Normal Year



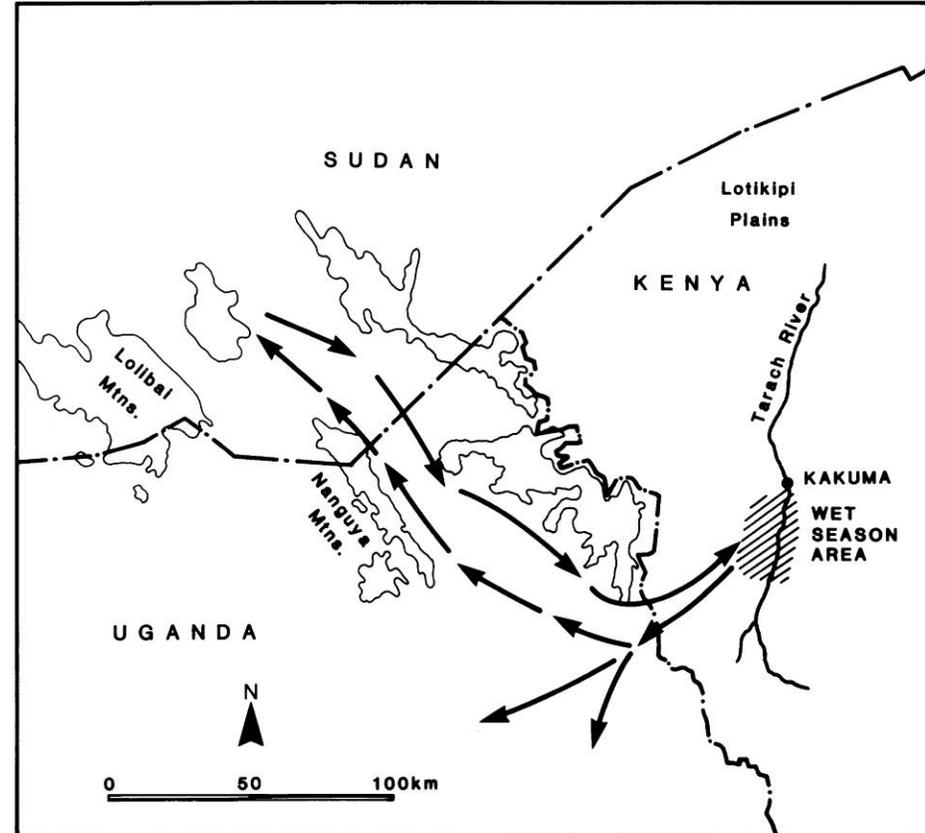
source: McCabe, 2000

Map 10.3: Ngikamatak Migration - Drought



source: McCabe, 2000

Map 10.4: Ngiyapakkuno Migration - Drought



source: McCabe, 2000

# Recovery

- System of social organization critical to a family's ability to recover from drought
- Depend on network of stock friends and relatives to ask for animals
- Focus on the raising of goats
- Make sure that family members present at bridewealth distributions

## Impact of Drought

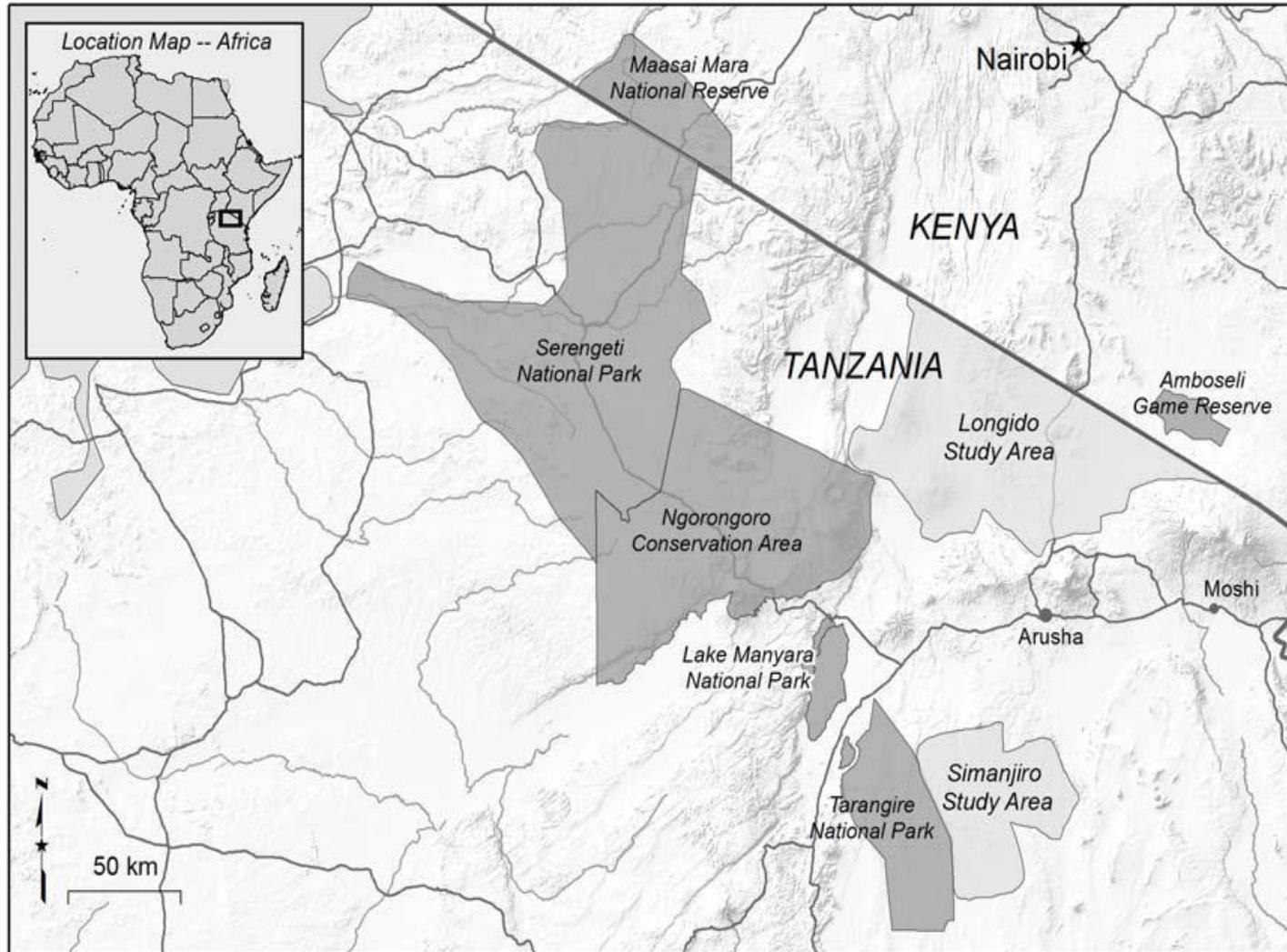
- Despite these efforts between 60 %-90 % of livestock die in severe drought.
- Severe drought used to occur approximately once every 10years – now more frequent
- Conflict occurs with mobility and in recovery

Raiding one way of accumulating livestock



Our current research (McCabe, Leslie and Davis) asks the question: Under what conditions do extreme events become transformative?- this is an in-depth examination of the 2008/2009 drought in northern Tanzania

Another research project examines the relationship of climate to conflict in Kenya. This is a nation-wide project (O'Loughlin, McCabe, Tir). The field work for this project is complete and is in the analysis stage.







- As people diversify their livelihoods the rangeland becomes fragmented.
- Diversification is motivated by many factors; human population increases, poverty, desire to be “modern.”
- “Arguably the most significant trend in redefining pastoralism in eastern Africa is the fragmentation of rangelands. Rangeland fragmentation directly threatens adaptive processes in customary pastoral systems, as it becomes more difficult to move livestock across the land and key resources are fenced off and set aside for non-livestock use.” (Lind et al. 2016)

## 2008/09 Drought in Northern Tanzania

- In 2008/2009 drought has been described by people in northern Tanzania as the “worst in living memory”.
- However other droughts were worse in terms of lack of rainfall, including the 2010/2011 drought.
- I was in the field in Simanjiro during this period and hundreds of thousands of livestock from southern Kenya and Longido District migrated in, as there was still grass in Simanjiro.
- Again mobility the key strategy for coping with drought
- However, many traditional drought refuges were alienated by conservation areas, commercial ranches, village boundaries, and the conversion of rangelands into cultivated lands

## Methods

- Focus group interviews in both sending and receiving areas.
- Household surveys in 5 villages in the sending areas and 5 in the receiving area.
- Long-term research in the receiving area

- Following this drought traditional institutions that allowed access to natural resources changed in Simanjiro. For the first time ever villages made rules concerning how many people and livestock could migrate in, when they could come, how long they could stay, and if they would have to pay for the use of pasture and water.
- An important shift from traditional informal institutions to formal village government based institutions
- On the migration south people were denied access to some areas because they were outsiders- this was a completely new phenomenon.
- Potential for significant shifts in the resilience of the social and ecological system of northern Tanzanian rangelands

# Conclusions

- The major environmental challenge for pastoral peoples living the drylands of East Africa is drought
- Drought appears to be more frequent than in the past
- Traditional systems have institutions that can both cope with drought and recover from drought – but this also can include conflict
- Over the last twenty years many pastoral systems have diversified
- Rangelands have been fragmented by commercial ranches, parks and protected areas, privatization, and cultivation.
- Mobility, the principal adaptive strategy that pastoralists have used to cope with spatial and temporal variations in resources, especially important during drought, has been in many instances compromised.

## Conclusions

- Many studies suggest that the resilience of East African pastoral systems is being challenged.
- The ability of people and livestock to respond successfully to drought is compromised.

# Thank You

- National Science Foundation
- Governments of Kenya and Tanzania
- People of Isiolo, Simanjiro, and Longido
- University of Colorado