

Seeking Alternative Livelihoods in Northern Kenya

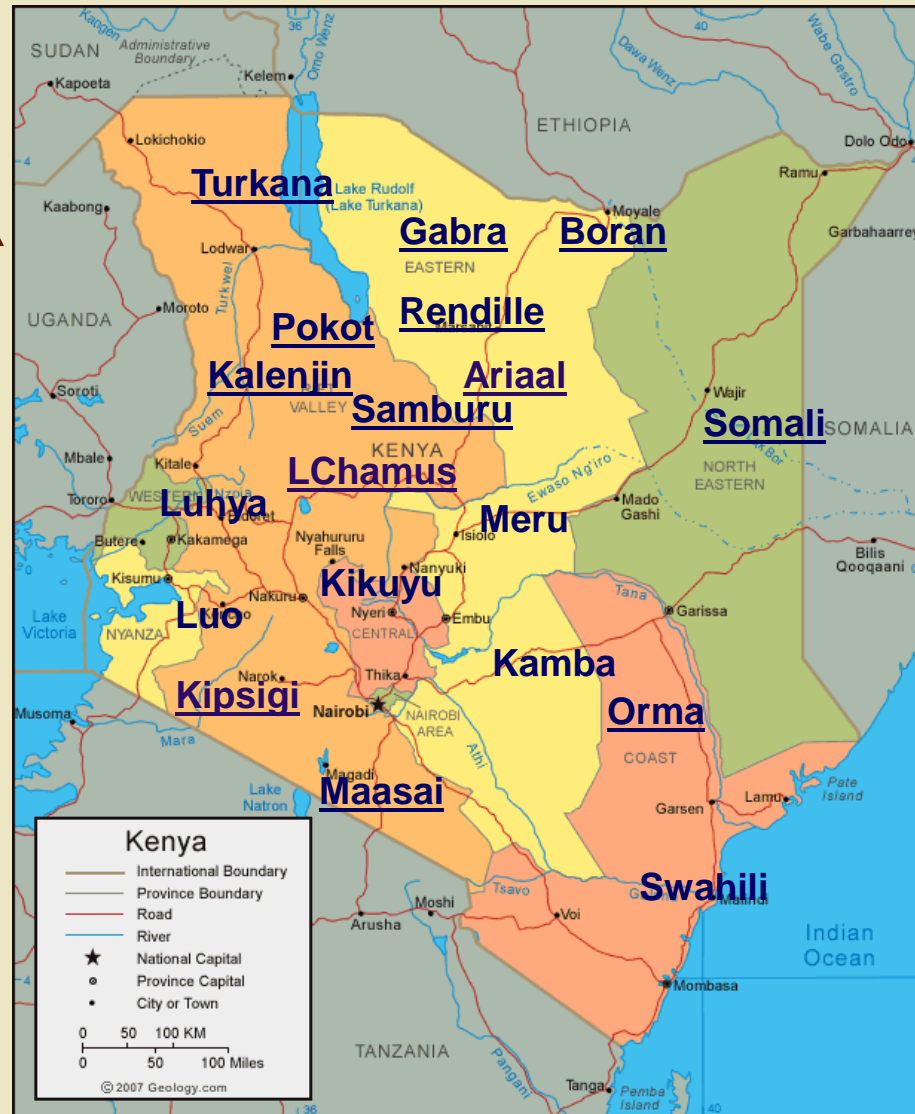


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Pastoralist Societies in Kenya



Pastoralism

- Human livelihood based on the raising of domesticated animals for milk, meat, transport and trade
- Adaptation to arid lands marginal for cultivation but supports domesticated animals, where animals taken to pasture and water
- Livestock owned and managed by households
- Kinship ties (clans) regulate access to pasture, often communally shared



**Ariaal Rendille,
Kenya**

Pastoralism requires mobility

- **Animals must be provided pasture, water, salt**
- **Animals must be protected from insect vectors, predators, disease and theft**
- **Movements must adjust to seasonal, climatic, or social/political changes**

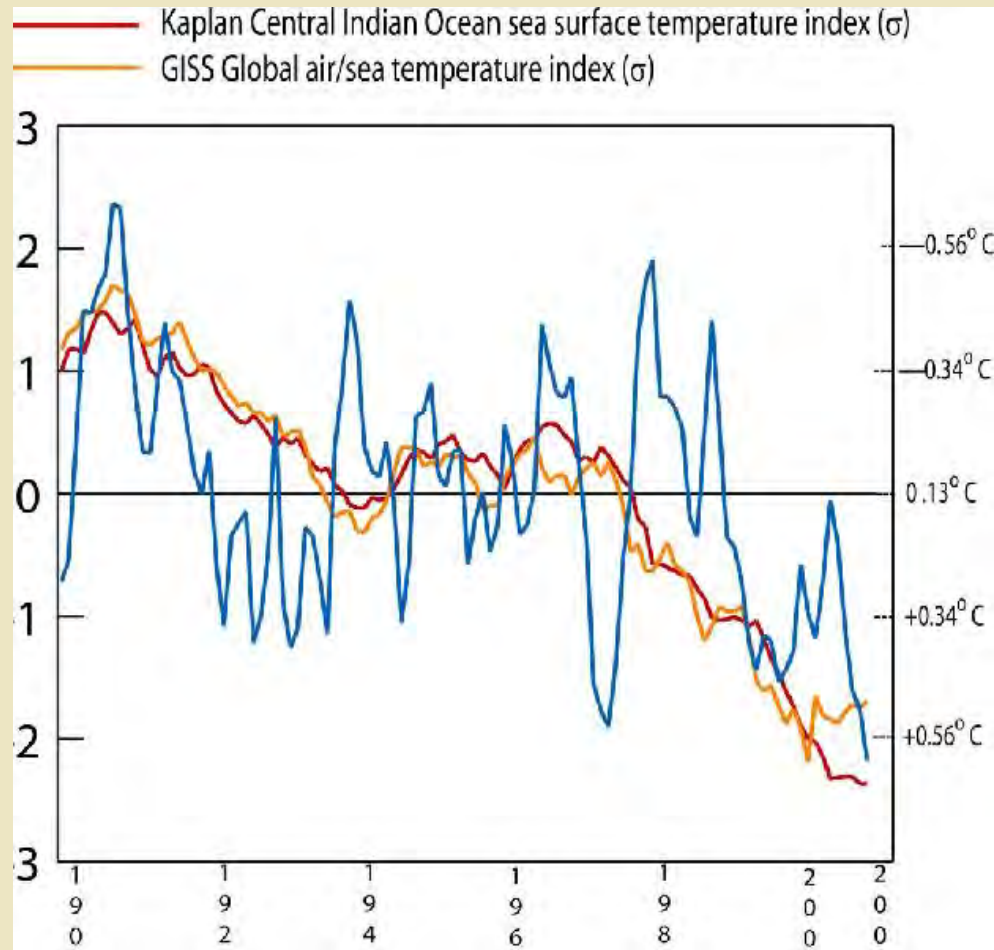


Factors Leading to Alternative Livelihoods for Kenyan Pastoralists

- Drought and Famine
- Decline in sufficient livestock holdings
- Loss of grazing lands to farms, game parks, estates
- Loss of common property resources, privatization
- Increased commoditization and cash needs
- Political insecurity, violence, proliferation of small arms



Rainfall in Kenya 1900-2009



NOAA Climate Prediction Center,
www.earthzine.org

Marsabit District Kenya

Total Livestock Units 1971-2000



Dietz, Adano, and Witsenburg. 2005.

The pulls of and pushes towards sedentarization

Pushes

- Drought, loss of animals, impoverishment
- Theft and insecurity
- Political conflict, war

Pulls

- Social services, health care, schools
- Wage paying jobs
- Commerce, entrepreneurship
- Agricultural resettlement schemes
- Police and physical security



Sedentarization

- **Represents an alternative economic strategy as part of a larger set of diversification strategies.**
- **Does not result in a sharp break with the pastoral community or economy.**
- **Does not imply one type of lifestyle or economic activity, but includes a range of economic choices.**
- **Usually accompanied by larger socio-cultural changes.**
- **Entails costs and benefits.**

Benefits of Settling



Education, wage jobs, commerce



Access to health care



**Food
security**



Physical security

Costs of settling



Poor housing



Changes in diet and nutrition



New disease risks



Decline in moral economy



Idle youth



Changes in beliefs and customs

Sustainable Livelihoods

- Livelihood is a means of living and the capabilities, assets, and activities required for it. A livelihood is sustainable when it can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, provide sustainable livelihood opportunities for the next generation, and generate net benefits for other livelihoods at the local and global levels, in both the short and long terms.

(Chambers and Conway 1992: 25-26)

Scoones' Sustainable Livelihoods

- Sustainable livelihoods are achieved through access to a range of livelihood resources (natural, economic, human and social capitals) which are combined in the pursuit of different livelihood strategies (agricultural intensification or extensification, livelihood diversification and migration). Central to the framework is the analysis of the range of formal and informal institutional factors that influence sustainable livelihood outcomes.

(Scoones 1998:1)

Alternate Livelihoods

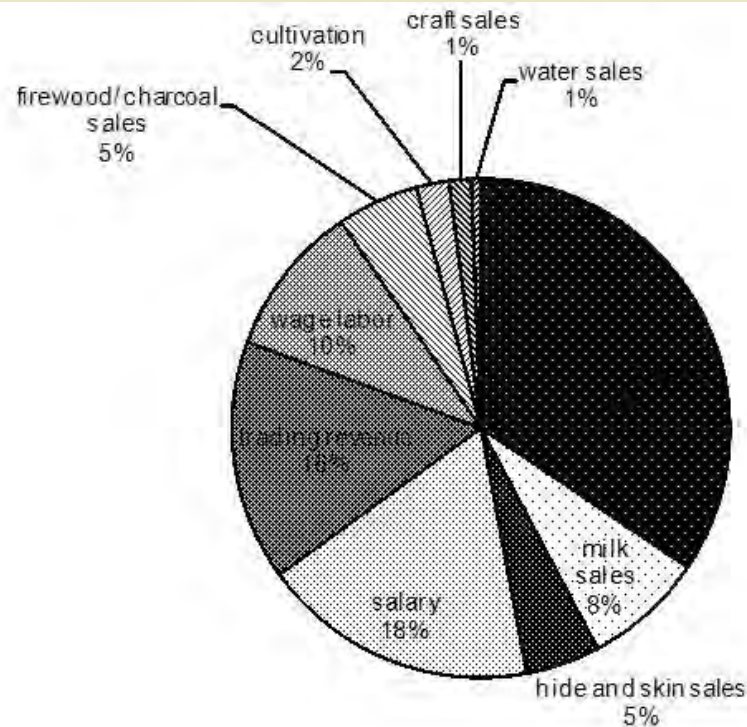
- Marketing livestock , dairy, hides, cultivated crops
- Entrepreneurship – shops, transportation, business
- Wage labor: construction, driving, restaurants and shops, domestic work
- Petty commodity trade – tobacco, *khat*, charcoal, firewood, beer-brewing



McPeak and Little's Alternative Strategies in Northern Kenya (Part of Parima Project)

Investigated alternative livelihood strategies in six pastoral, agro-pastoral, and agricultural communities in northern Kenya
(30 HH each - Ariaal, Boran, Gabra, Il-Chamus, Rendille, Samburu)

Livestock Sales	34%
Salary	18%
Trading revenue	16%
Wage labor	10%
Milk sales	8%
Hides and skin	5%
Fuelwood/charcoal sales	5%



(McPeak and Little 2005:95)

McPeak and Little's Findings

- Larger herds concentrated in drier areas; herders derived higher share of income from livestock production. They also had more milk available for home consumption.
- Herders who were more mobile suffered lower losses during drought. Households with larger herds before the drought had larger herds after the drought, showing herd accumulation at the household level provided a self insurance role
- Areas with higher share of income from non-pastoral sources had higher welfare in terms of higher income, higher expenditures, and in some cases were more food secure as they convert wages into food purchases.
- Areas where household member spent more time in formal education drew higher shares of their income from non-pastoral sources and had higher incomes and expenditure levels, including food.

Adano and Witsenburg's (2004) Marsabit Mountain Study



Adano and Witsenburg Study

- Marsabit Mountain has attracted 30,000 settlers in the past 40 years, mainly impoverished Rendille, Samburu, and Boran who settled on agricultural schemes and open land
- Surveyed 287 households, found large differences in HH wealth: 80% had less than 8 TLU/HH, 16% of total TLUs on mountain
- Income from arable farming meager, relying on market sales of female grown vegetables including kale, tomatoes, *khat* (*Catha edulis*).
- While households produced average of 1000 kg maize annually, only 12-20% HH were self sufficient in grain (253 kg/person/year)
- Only 3% of households earned > US\$1 per person per day
- 80% said they would not return to pastoral lifestyle if they had the choice.

(Adano and Witsenburg 2005).

Rendille Maternal and Child Health and Nutrition Study

Fratkin, Nathan, and Roth 2004



Health and Disease

Kenya Health Statistics - Children

Infant Mortality Rate 53.4/1000 (2010)

Under-5 mortality rate 127/1000 (2008)

- **Respiratory 20 %**
- **Diarrhea 17 %**
- **HIV/AIDS 15 %**
- **Malaria 14 %**
- **Measles 3 %**
- **Injuries 3 %**

Health and disease among pastoralists

- High rates of malaria, STDs, accidents
- Contagion from livestock contact including anthrax, trachoma, brucellosis, tuberculosis
- Reduced risks of 'settled' diseases – measles, cholera, worm loads
- Poor access to health clinics, medicines, and vaccinations

(Sheik-Mohamed and Velema 1999)



Research Question

What are costs and benefits in health and nutrition to women and children living in settled vs. nomadic communities?

As measured by

- Nutritional indices**
- Morbidity change**
- Economic indices**



Study design

205 Women and their 488 children under 6 (< 9) years in five Rendille and Ariaal communities; Bimonthly surveys over three years (1994-1997)

- **Dietary recalls of each mother and child in last 24 hours**
- **Anthropometric measurements of height, weight, TSF, MAC measurements diarrhea, fever and/or respiratory illness**
- **Outpatient records at Marsabit had Laisamis Hospitals and clinics at Korr, Ngrunit, Songa, and Karare**
- **Demographic changes (fertility, mortality, migration)**
- **Economic activities in past 30 days**

Study Sites in Northern Kenya

- **Lewogoso** –nomadic herding community
- **Karare** – settled w/ cattle near capital
- **Songa** – agricultural scheme
- **Korr** – famine relief town
- **Ngrunit** – isolated town



1. Lewogoso – Nomadic Ariaal pastoral community



250 people in 50 households, 600 camels and cattle, 2000 goats and sheep

2. Korr – Lowland Rendille Town



Created by Catholic Mission to distribute famine relief foods; today approximately 6000 people in 12 km radius, livestock in distant camps

3. Songa - Agricultural Scheme on Marsabit Mountain



6000 Boran and Rendille in separate villages, practice irrigated cultivation and marketing of kale, tomatoes, peppers, tobacco and *khat*

4. Karare- Agro-pastoral community on main road 17 km south of Marsabit town



**Settled community of 6000 Ariaal practicing dry land maize
cultivation and livestock keeping**

5. Ngrunit – Isolated agro-pastoral community in the Ndoto Mountains



Community of 2000 Samburu, Ariaal, and Dorrobo people with primary school, health clinic, but no market infrastructure

Measuring weights, heights, triceps skin folds, mid-arm circumferences



Findings

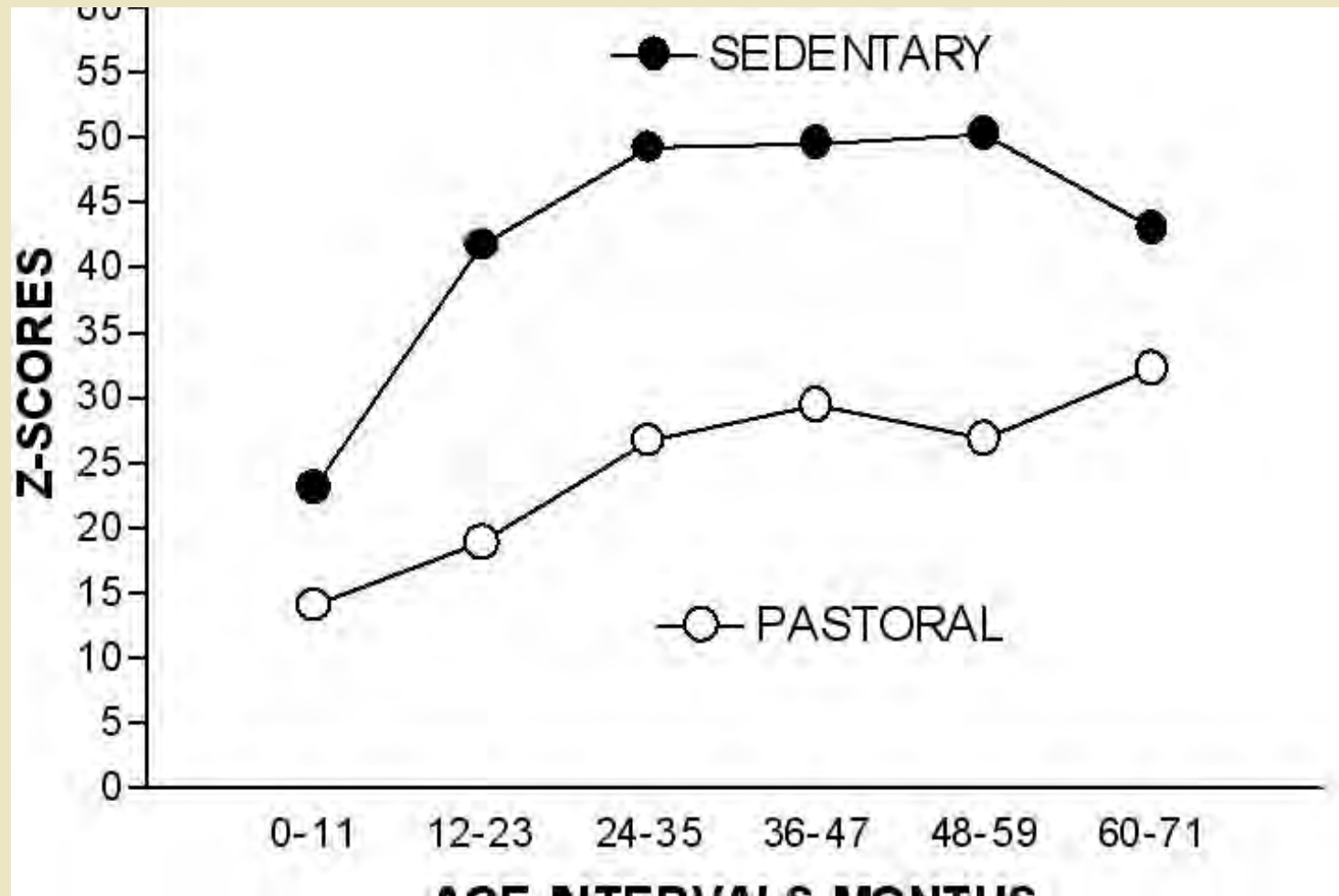


Pastoralist children were heavier than settled children in all age groups.

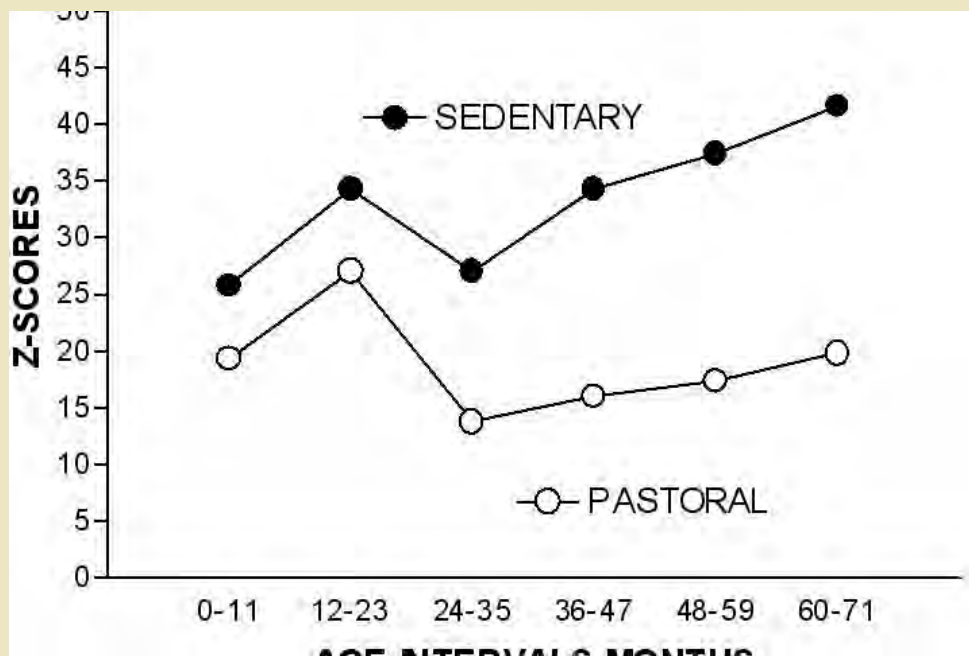
Settled children showed three times the level of malnutrition and stunting

Settled children had higher rates of respiratory illness and diarrheas

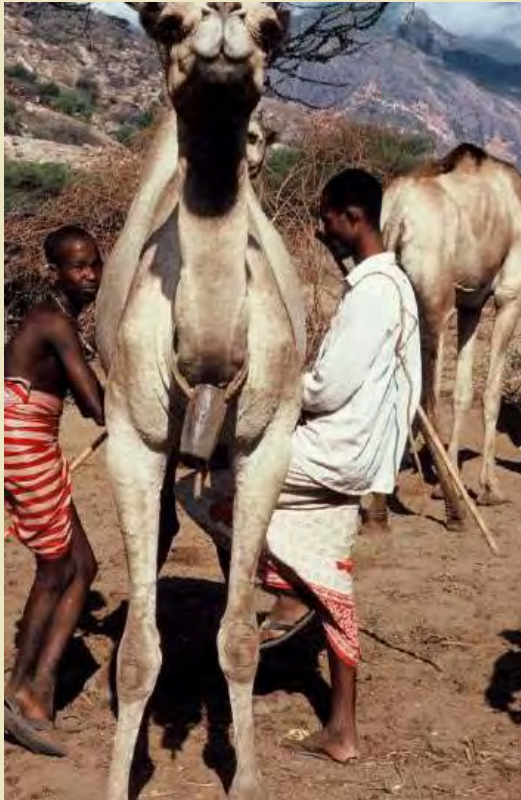
**Measures of malnutrition weight-for-age,
pastoral versus sedentary,
wasting defined as below -2 Z scores.**



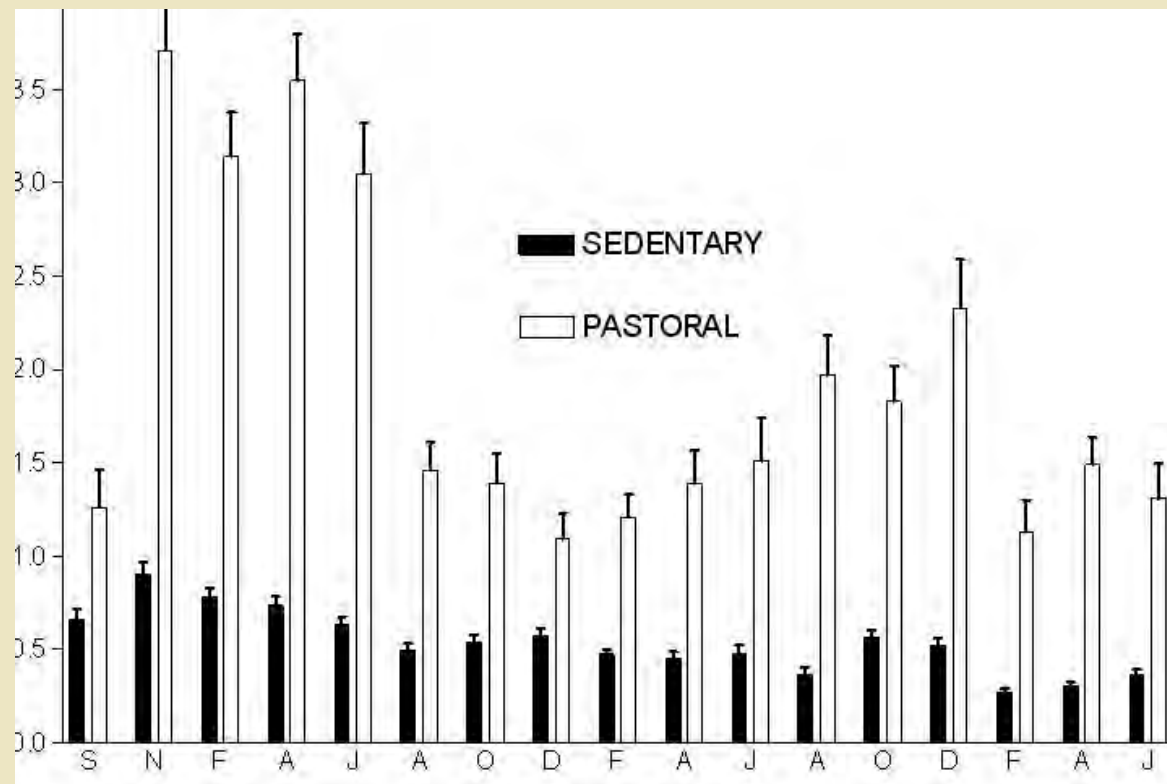
Measures of malnutrition for height-by-age, pastoral versus sedentary samples, stunting defined as below -2 Z-scores



**Nomadic children had
three to five times the
milk consumption as
settled children**



Milk consumption pastoral vs. settled communities



Fratkin and Roth 2004

Health and Illness: Morbidity Results

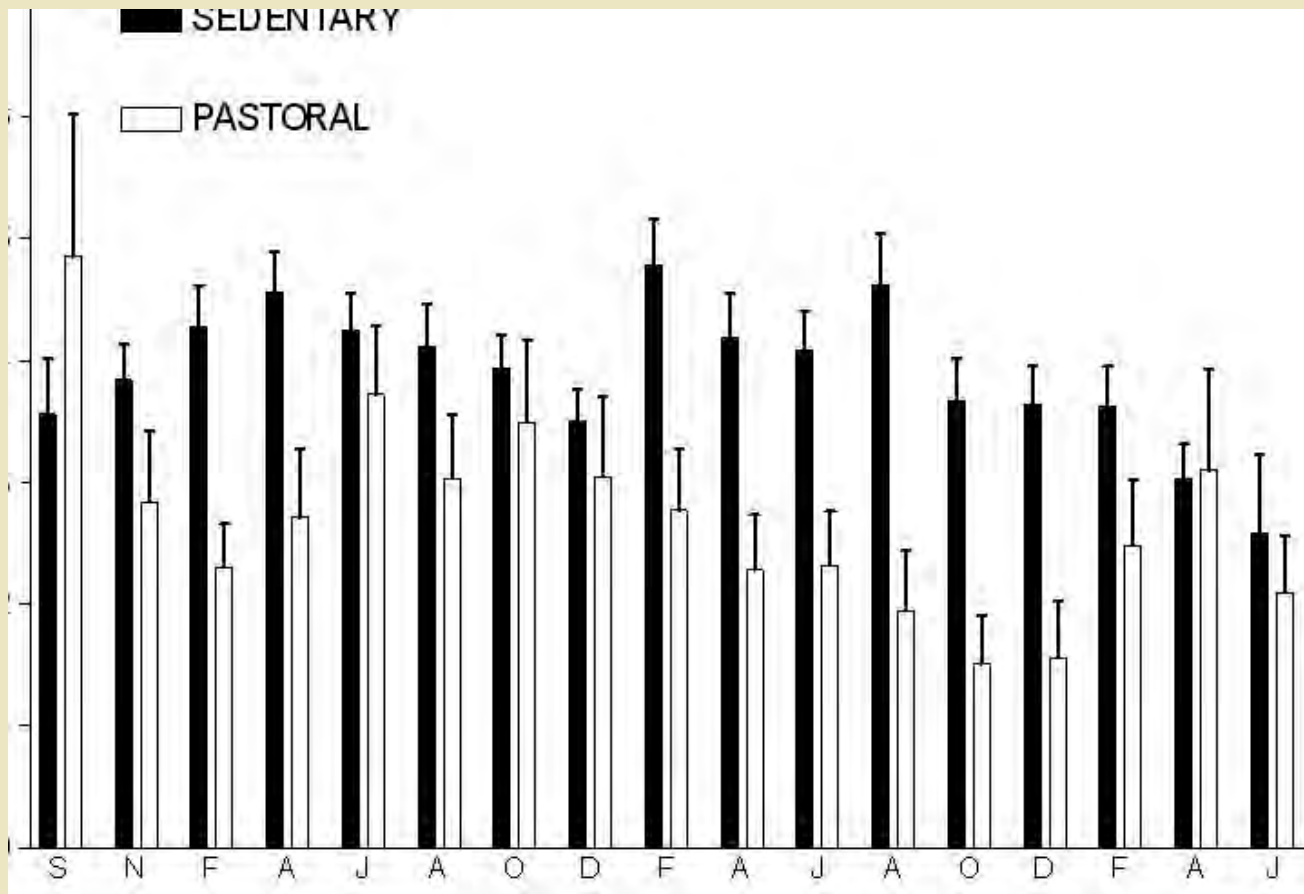
Nomadic children have less respiratory or diarrheal diseases than any of 4 settled communities

Average days ill for children in the nomadic pastoralist communities only twice in 17 periods exceeded that in the sedentary communities



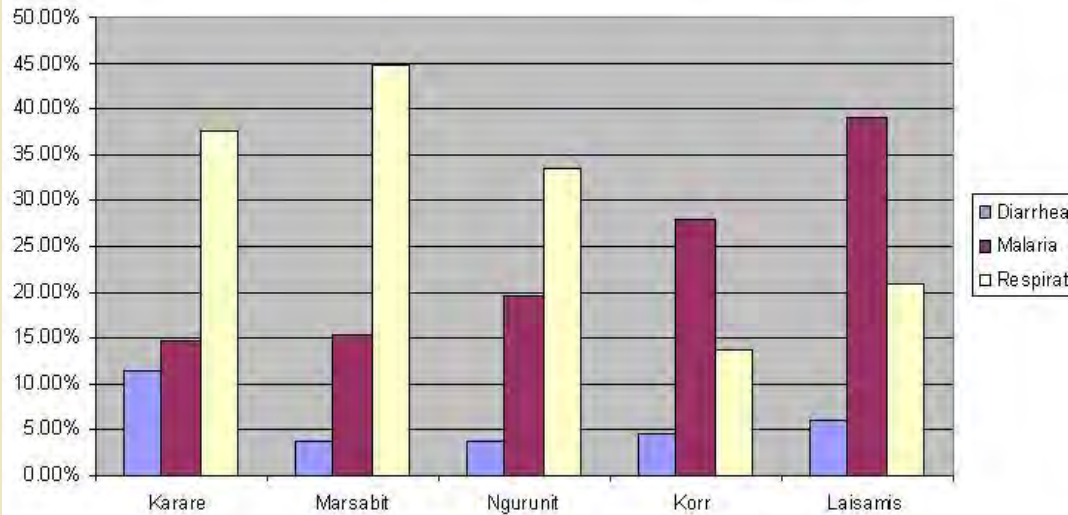
Morbidity

Days ill over study period, pastoral versus sedentary samples, means and standard errors of the means



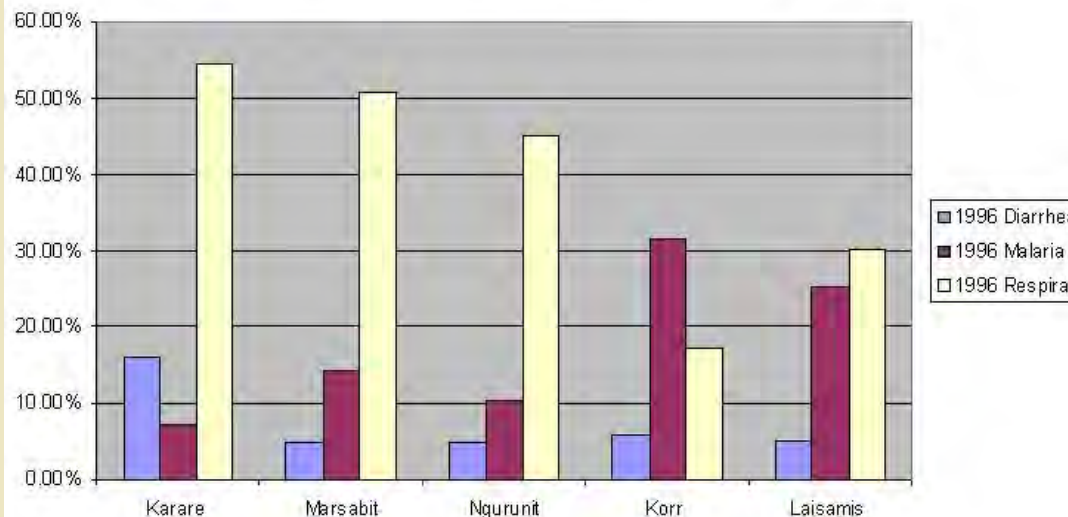
Clinic Data: Diarrhea, Respiratory Diseases and Malaria

Diarrhea, Respiratory Diseases and Malaria by Clinic 1995



Normal Year 1995

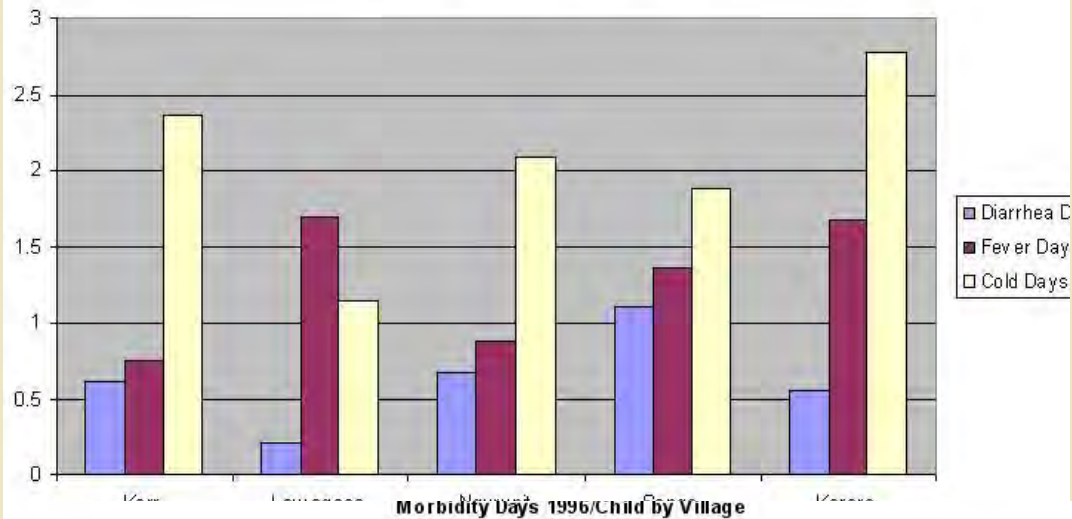
Diarrhea, Malaria and Respiratory Diseases by Clinic 1996



Dry Year 1996

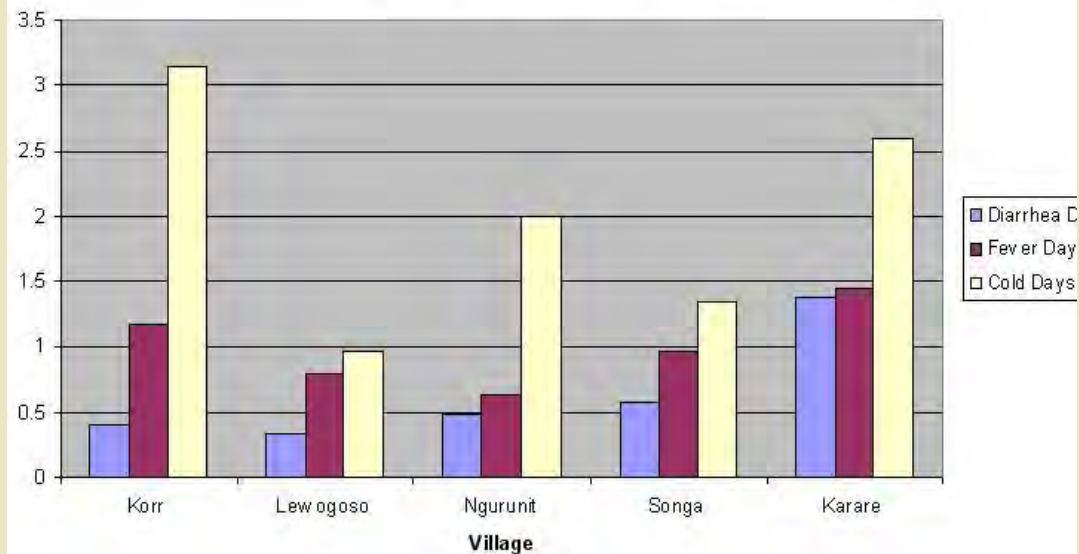
Morbidity Days/Child by location

Morbidity Days/Child 1995 by Village



Normal year 1995

Morbidity Days 1996/Child by Village



Drought Year 1996

Health Summary

- Rendille pastoralist children are heavier and taller than settled children. The main factor in the difference seems to be lack of access to milk in settled communities.
- There is an increase risk of disease -- particularly diarrhea and colds -- among all settled children. This may reflect synergy with malnutrition.
- Climatic and geographic aspects of settlements – altitude and rainfall -- affect respiratory and malarial morbidity.

Conclusions

- **Pastoralism is an adaptation to arid lands. Livestock provide regular and adequate food to human population if herders have sufficient numbers of animals.**
- **Farms and town settlement are important options for poor pastoralists. Alternative livelihoods can contribute to food security but may result in poorer nutrition and greater disease risk.**
- **Both pastoral and settled populations need to be supported in food security, access to health care, and education.**

Thank You!



References

Desta, S. and D.L. Coppock 2004. Pastoralism under Pressure: Tracking system change in southern Ethiopia. Human Ecology 32(4): 465-486

Dietz, Ton, Wario Adano, and Karen Witsenburg. 2005. Natural Resources and Conflicts: Theoretical Flaws and Empirical Evidence from Northern Kenya". African Studies Association, Washington DC

Fratkin, Elliot and Eric A. Roth As Pastoralists Settle: Health, Economic and Social Consequences. 2005 Springer Publishers.

Nathan, M.A., E. Fratkin, and E.A. Roth . 1996. Sedentism and Child Health among Rendille Pastoralists of Northern Kenya. Social Science and Medicine 43(4): 503-515.

McPeak, John and Peter D. Little 2005. Cursed if You Do, Cursed if You Don't: The Contradictory Processes of Pastoral Sedentarization in Northern Kenya. In E. Fratkin and E.A. Roth (eds.) As Pastoralists Settle. Pp 87-104. New York: Kluwer Academic Publishers.

Scoones, I. 1998. Sustainable Rural Livelihoods: A framework for analysis. IDS Working Paper 72, University of Sussex.

Scoones, I. 2007 Sustainability. Development in Practice 17 (4/5): 589-596.