

# **Is Settling Good for Pastoralists? The Effects of Pastoral Sedentarization on Children's Nutrition, Growth, and Health Among Rendille and Ariaal of Marsabit District, Northern Kenya.**

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## **Introduction**

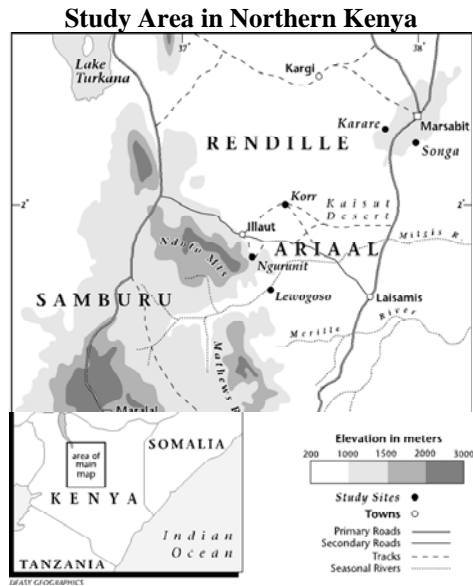
The settling of formerly mobile pastoral populations is occurring rapidly throughout East Africa. Pastoral sedentarization has been encouraged by international development agencies and national governments to alleviate problems of food insecurity, health care delivery, and national integration. Although the majority of pastoralist households in many areas remain committed to a nomadic livestock production system, many formally pastoral families have settled near towns or on farms to pursue alternate livelihoods that include cultivation, agro-pastoralism, trade or wage labor.

Pastoralists settle for a variety of reasons, both in response to 'pushes' away from the pastoral economy and to 'pulls' of urban or agricultural life. Maasai in southern Kenya, for example, have lost grazing lands due to the growth of agricultural and pastoral populations, privatization of land for commercial farms and ranches, and the expansion of tourist game parks. In the more arid and sparsely populated north and northeast of Kenya, many pastoralist families have settled in response to the environmental stress of drought and famine combined with the political violence of livestock raiding and ethnic conflict.

While settling provides access to a wider economic resource base that may mitigate the consequence of food insecurity and offer access to alternative livelihoods, it has not been demonstrated that abandoning the pastoral way of life has been beneficial to the health and well-being of pastoral populations. The paper summarized in this brief reviews the outcomes of a long-term study of nutritional and health changes among nomadic and settled Ariaal and Rendille communities in Marsabit District, Kenya.

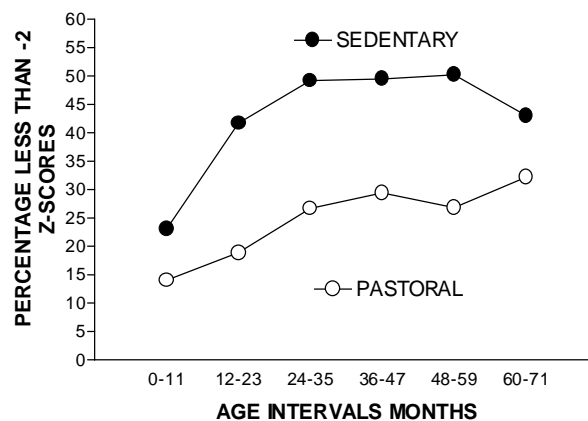
## **Nutrition and Health Effects of Sedentarization**

To monitor child growth and health the authors surveyed five Rendille/Ariaal pastoral communities in Marsabit District, northern Kenya, every two months from September 1994 to June 1997. One community, Lewogoso, is fully nomadic with the other four, Korr, Karare, Ngrunit, and Songa, are sedentary communities. Forty women and their under six year old children were selected from each community, for a total sample of 205 adult women and 488 children. Data collected include dietary recalls, anthropometric measurements, morbidity data and economic differentiation and specialization. Monthly household expenditures, wages and sales of livestock, milk and/or vegetables, and mother's reproductive status, (pregnant and/or breastfeeding), were also recorded each visit.



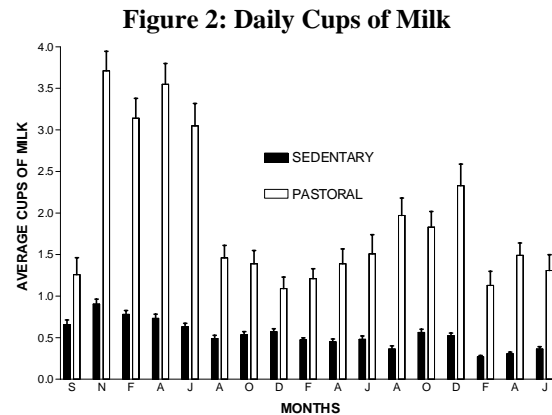
Analysis of the growth and morbidity data yielded interesting, if unexpected, results. The authors find far poorer growth patterns in the sample of children from the four sedentary communities relative to the same-aged children from the nomadic community. As Figure 1 shows, the percentage of children in the sedentary community whose weight-by-age Z-Scores are less than -2 (meaning those children whose weight-by-age is 2 standard deviations less than the norm) are much higher than those in the nomadic community. As weight-by-age measures wasting, a good indicator of current nutritional wellbeing, this suggests that nomadic children are larger and healthier than their sedentarized counterparts.

**Figure 1: Weight for Age: Percentage of children with Z scores less than -2.**



Examination of the incidence of respiratory diseases, fevers, and diarrhea among settled and nomadic Rendille children in Marsabit district further revealed that nomadic children suffered significantly less morbidity from diarrhea and respiratory disease than did

children from settled towns. This is quite unexpected as the nomads have the most tenuous access to water and no formal sanitation system. The study also revealed strong differences in women’s nutrition, with nomadic Rendille obtaining more nutrients, particularly milk protein, than highland farmers. As with children, the most striking dietary change with sedentism for women was reduction in milk intake and an increase in grains. As Figure 2 shows, there is a marked difference in the average daily per capita intake of milk between the nomadic and sedentary communities. Given that milk is such a rich source of protein and micronutrients, this could explain part of the differentials in child growth and morbidity rates.



**Conclusion and Policy Implications:**

The key finding of this research is the significant difference evidenced in the growth patterns and morbidity of nomadic versus settled women and children. Differences in child growth are attributed mainly to better nutrition, and particularly access to camel’s milk within the nomadic communities. The considerably lower incidence of diarrheal and respiratory diseases for the nomadic versus settled communities, coupled with the finding of lower rates of malnutrition and stunting among nomadic children, indicate an unexpected edge for health and nutrition among nomadic pastoralists

The policy implications of these findings are significant. Although pastoralism is no longer an option for everyone living in dry regions like northern Kenya, the relative health advantage evidenced in nomadic children vis-à-vis their sedentarized counterparts, should be part of decisions affecting social, economic, and health policy for pastoral regions. Specifically the authors recommend that animal husbandry be supported in both settled and nomadic communities, and the production of protein-rich legumes be encouraged among communities of settled farmers and agro-pastoralists.

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