



Nawiri Briefing Paper

Livelihoods Change, Drought, and Malnutrition in Illeret, Northern Kenya



This study aims to investigate how recent livelihoods trends such as the loss of the delta and recent shocks such as the 2022 drought have directly impacted household food security and nutrition.



Introduction

The Dasanech community of Kenya lives in Illeret, which is one of the most arid and remote parts of the country, in the far northeast of Marsabit County. Their proximity to the Omo River influenced a livelihood that has been based mainly on agropastoralism, with the Omo delta providing land for livestock grazing and cultivation. However, for many years Illeret has been recognized as an area prone to high levels of child malnutrition. Northern Kenya has been experiencing a severe drought since 2021. In Illeret, the drought is associated with reports of child malnutrition and mortality, and in response the Nawiriⁱ project supported a rapid participatory assessment of the causes of malnutrition in Dasanech children and mothers. The assessment was carried out in Illeret ward in April 2022, at the height of the drought, and used participatory epidemiology methods with 12 independent groups of participants. Results were triangulated with secondary data.ⁱⁱ

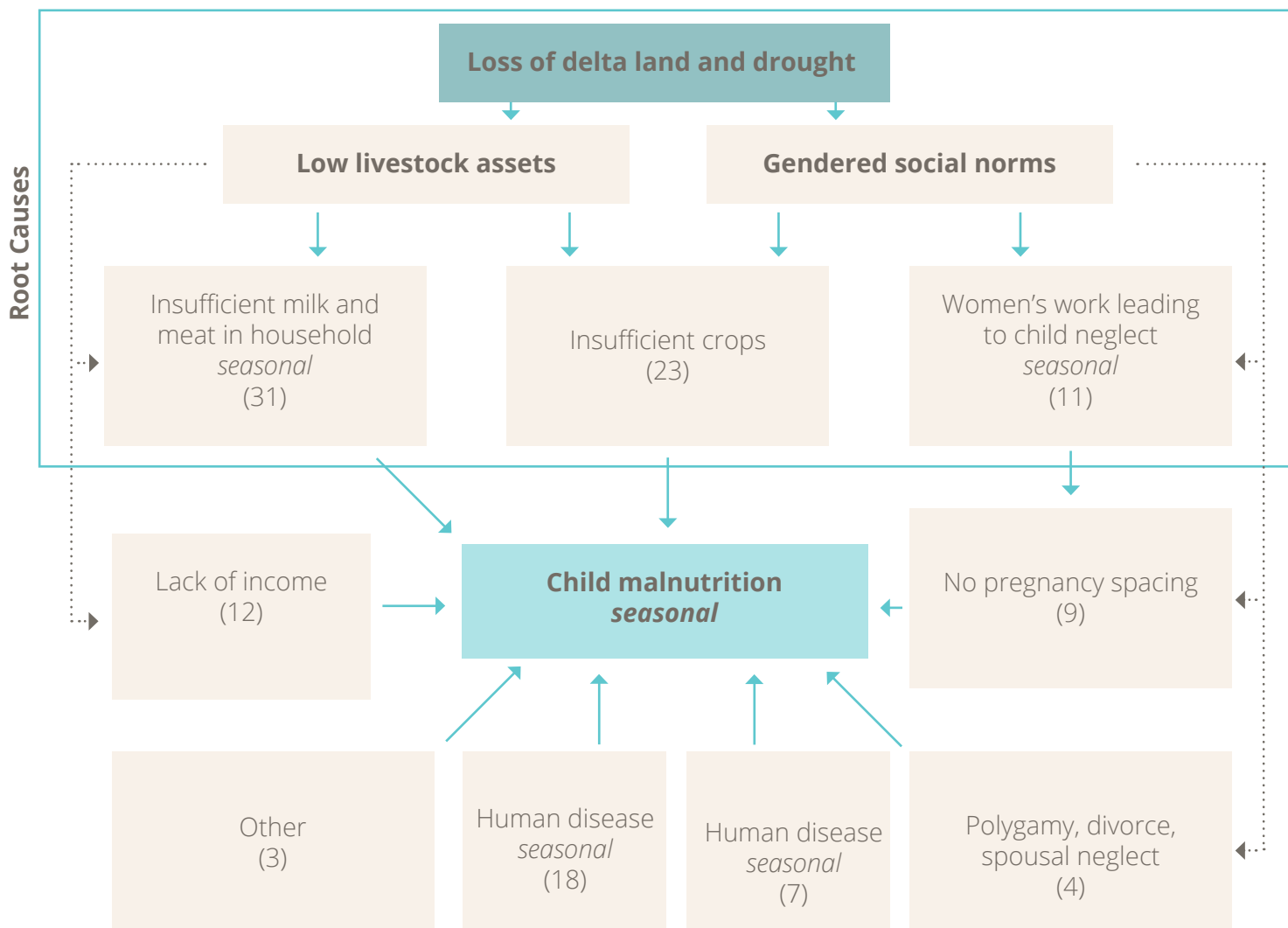
Local perspectives: what causes child malnutrition?

Participants described multiple and interrelated causes of child malnutrition, and the relative importance of these causes (Figure 1). Each of these main causes is described in more detail below.



Critical changes in land access - until around 2010, the livelihood of the Dasanech community was highly dependent on the Omo delta and specifically the natural flood cycle of the Omo River, which flows from Ethiopia into the northern end of Lake Turkana in Kenya. The delta provided a critical dry season grazing reserve for their cattle and good riverine farmland where they practiced dry season flood recession agriculture. Dairy products from cattle and crops from flood retreat farming were the two most important food sources for the Dasanech at the time. Seasonal migrations to the delta ensured the survival of their cattle as well as household food security for most of the year. Before 2010, participants recalled only rare cases of child malnutrition, and they attributed these cases mostly to disease.

Figure 1. Causes of child malnutrition.



Other = early marriage, insecurity, death of husband, alcohol abuse

Notes: Figure 1 derived from interviews with women in Illeret followed by proportional piling of causes with 12 independent groups of women. The figures in parentheses represent the scores from all the groups presented as a proportion of the total scores.

However, a gradual loss of delta land has occurred over many years due to the rising water levels of Lake Turkana, a phenomenon that is occurring across many of East Africa's Rift Valley lakes. A recent Kenya Government report attributes this rise to increasing rainfall in the region and land degradation, as well as geological and tectonic factors in the Rift Valley.ⁱⁱⁱ Critically, the increase in Lake Turkana water levels accelerated in around 2010, and by 2012 the delta had become almost completely submerged, even during the dry season.^{iv} This change in water levels and reduced access to land led to a cessation of seasonal migrations into the delta. Consequently, the Dasanech lost their two main livelihood resources, viz., their dry season cattle reserve and flood retreat plots for crop production, and their two main sources of food and income or exchangeable commodities.

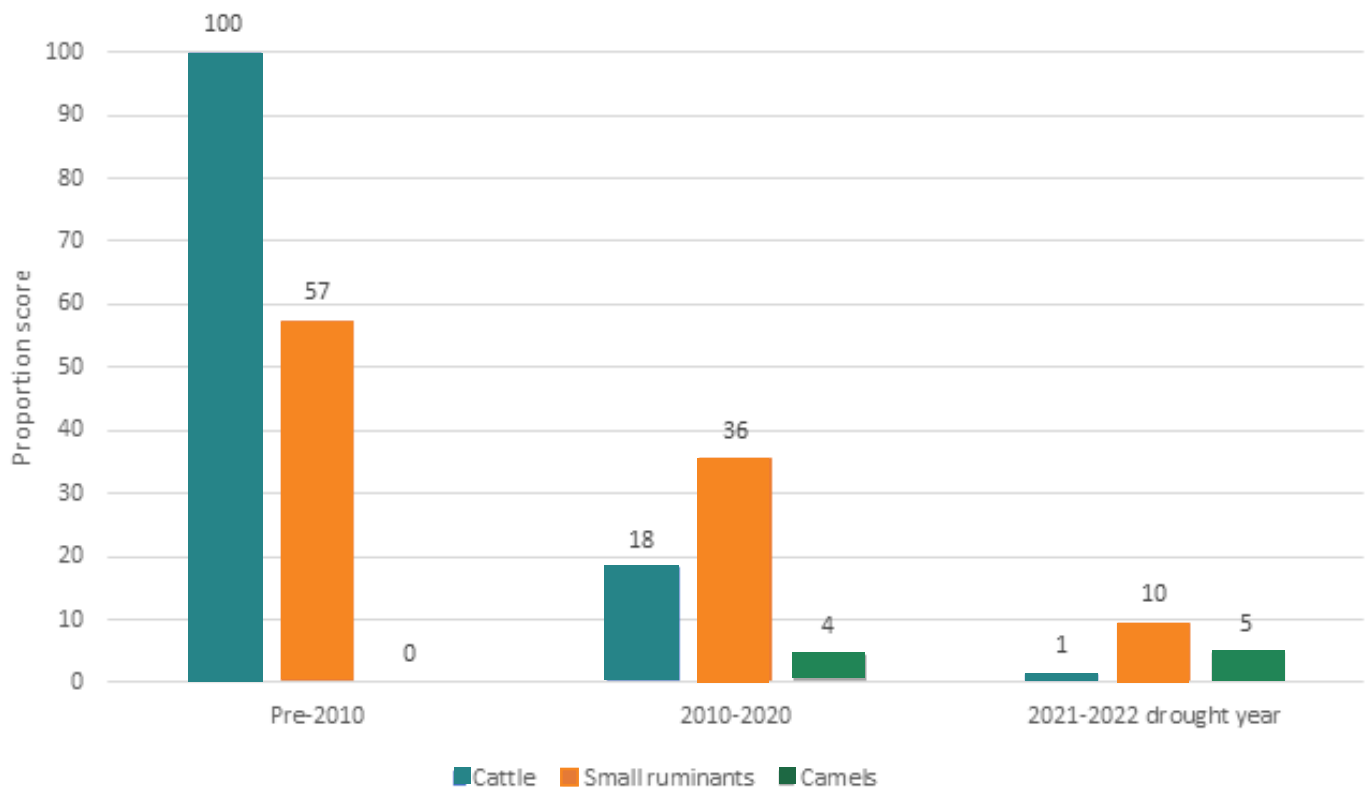


Dasanech cattle and sorghum fields on the Omo delta in 2011 before it became submerged.

Livestock losses - in arid environments in northern Kenya, livestock production typically relies on mobility to access highly seasonal and variable pasture. However, for the Dasanech herd, mobility is limited on the eastern side by Lake Turkana, to the north by the Ethiopian border and neighboring and competing ethnic groups, and to the west and south by competing groups within Kenya. This context means that the Dasanech have relied heavily on the dry season grazing areas of the Omo delta. However, the loss of these areas since 2010 corresponds with losses of cattle and small ruminants, with accelerated losses during drought (Figure 2). Further losses were associated with livestock diseases. Between 2010 to 2020, participants reported livestock losses of around 60 percent, and this had increased to 90 percent at the time of the assessment.

Changes in crop production - as water levels increased in Lake Turkana, people stopped using the delta land for cultivation, as it became permanently submerged. Instead, they resorted to more opportunistic rainfed crop production in seasonal riverbeds, but with disappointing results. Unlike flood retreat farming on the delta, rainfed crop production was limited by insufficient and unreliable rainfall in this arid area, resulting in either small or failed harvests. There are limited opportunities for irrigated farming, as both the lake water and groundwater are brackish and therefore unsuitable for crop production.

Figure 2. Changes in livestock herd size and composition, pre-2010 to April 2022.



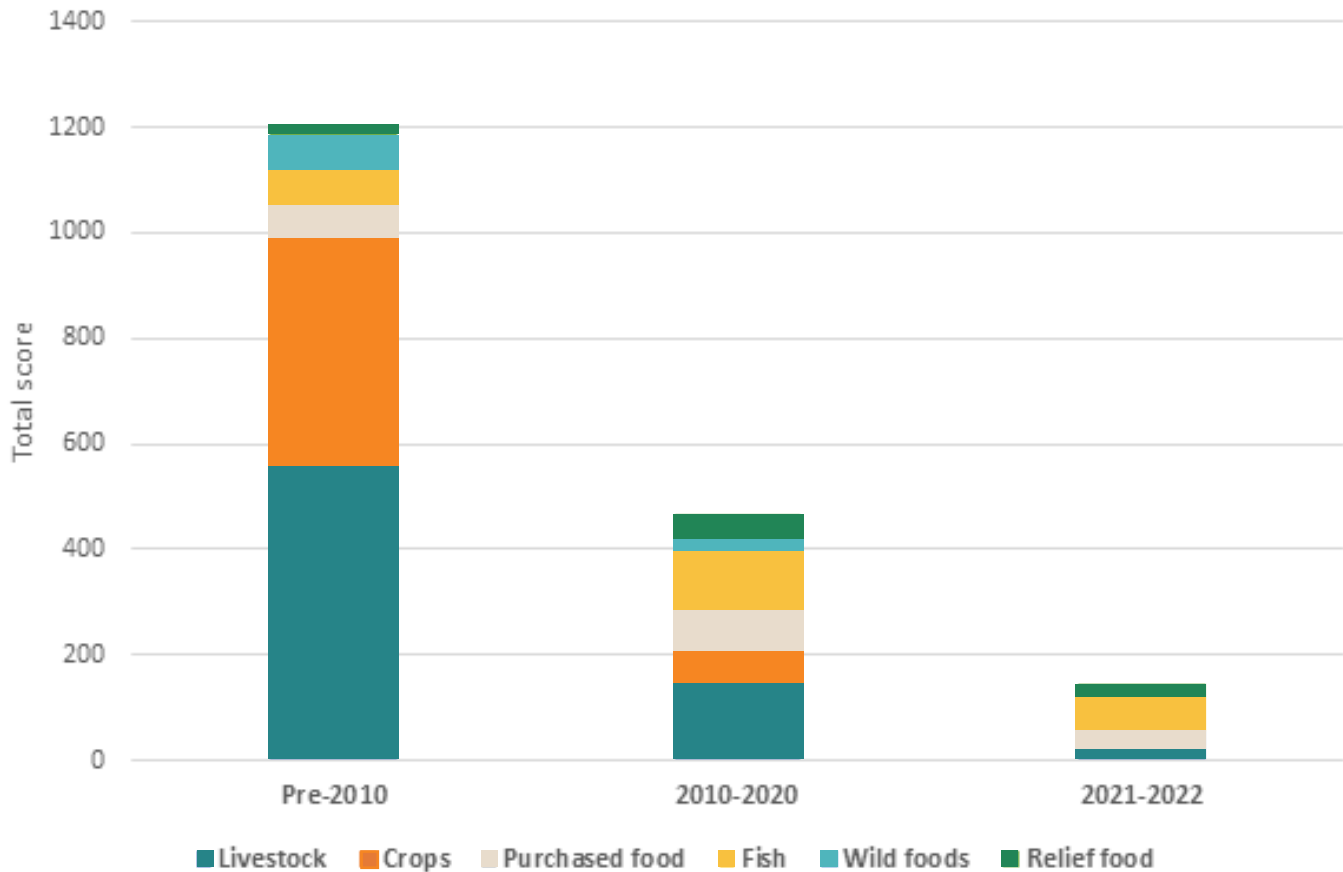
Note: Data derived from proportional scoring with 12 independent participant groups.

Fishing practices - in the past, very few Dasanech engaged in fishing, and they only consumed fish in times of extreme hunger. However, by 2020 a third of the community had taken up fishing in order to survive. By the time of the assessment in 2022, 65 percent of the community was engaged in fishing. Although rich in protein, the nutritional benefits from fish have likely been offset by the absence of energy-rich staple food, and the income benefits from fishing are minimal. Participants indicated that fish stocks are declining due to increasing competition over this resource with Ethiopian and Turkana fishermen.



A Dasanech fishing camp on the Omo delta in 2011, before the delta became submerged.

Figure 3. Changes in food availability, pre-2010 to April 2022.



Declining food availability - in the period between 2010 and 2020, participants recalled dramatic declines in food availability, which they attributed to declining access to delta land. This period was associated with a rise in child malnutrition. At the time of the assessment in April 2022, food availability had reduced even further, and children were dying of severe acute malnutrition. Participants identified the very limited availability of livestock products such as meat, milk, and other dairy products as the most important dietary factor contributing to both child and maternal malnutrition. They associated this problem with a decline in livestock herd sizes, specifically cattle numbers (Figure 2). Insufficient food from crop production was identified as the second- and third-most important factors contributing to malnutrition in children and mothers respectively. Again, this was attributed to the loss of flood recession farms on the delta. By 2022, fish were a relatively important component of people's diets.

Women's work - women's work burden was identified as the fourth-most important factor contributing to child malnutrition (Figure 1). For mothers, this factor was associated with a marked imbalance between the amount of work they do relative to the income they acquire and the nutritional benefits. For children, women's work burden led to long absences of the mother, resulting in inconsistent breastfeeding, skipping meals, and unhygienic practices due to the lack of adult supervision. An increase in women's work was associated with the loss of livelihoods, forcing women to engage in more labor-intensive activities to survive.

Declining income - insufficient income, primarily to purchase nutritious food, was identified as an important factor contributing to both child and maternal malnutrition. Again, this lack of sufficient income was directly associated with the loss of livelihoods and an increased dependency on cash to meet their food needs. This factor also relates directly to the other key factors.

Gender, cultural, and social norms - several issues relating to gender, culture, and social norms were identified as contributing to malnutrition. For example, no child spacing was an important contributing factor. This partly relates to a belief that the quality of breastmilk deteriorates when a nursing mother becomes pregnant, or that the mother cannot provide enough nutrients for herself, the nursing child, and the unborn infant, particularly in times of food scarcity and a heavy workload.

Other factors such as polygamy, divorce, and spousal neglect were also identified but were not considered important relative to other factors. In most cases, participants felt that the relevance of these issues only emerged as a result of destitution brought about by the loss of livelihoods.

Conclusions

Overall, the assessment results illustrate how recent livelihoods trends such as the loss of the delta and recent shocks such as the 2022 drought have directly impacted household food security and nutrition. The loss of the delta and the associated loss of food from farming and livestock products made the Dasanech more vulnerable to the ongoing drought. Although it took a few years for the full impact of the loss of the delta to be realized, in a relatively short period of time, the Dasanech lost their two most important sources of food and income. Since 2012, the community has struggled to survive in the face of declining livestock herds and failed harvests from rainfed crop farming. Increasing numbers of people began to fish and used other coping mechanisms to survive. As a result, women's work burden increased, as did cases of child malnutrition. By 2021, the community's coping strategies had been stretched to the limit, with drought and livestock disease decimating their remaining herds and resulting in emergency levels of acute malnutrition.

The case of Illeret clearly shows how changes in land access have profound impacts on livelihoods, food security, and nutrition in a remote agropastoralist community. The causes of rising water levels in Lake Turkana are open to question but could include localized increases in rainfall in the region or the effect of the Gibe III dam across the Omo River. As such, livelihood change among the Dasanech in Kenya could be linked to large-scale energy infrastructure development in a neighboring country, over which they have no influence.

Although the Dasanech have been remarkably adaptive over many years, the severe decline in their livelihoods and food security since 2010 indicates that their adaptive capacity has reached a critical limit. Following the drought of 2021–2022, it's uncertain what the future holds for this community unless clear pathways towards improved livelihoods can be identified and supported. The Dasanech themselves see a need for emergency relief while also seeing their futures as both livestock keepers and pursuing diversified activities. For the latter, long-term and meaningful investments in education, infrastructure, and services are clearly needed to support diversified livelihoods.

References

Government of Kenya (GOK) and United Nations Development Programme (UNDP). (2021). Rising Water Levels in Kenya's Rift Valley Lakes. Turkwel Gorge Dam and Lake Victoria: A Scoping Report.

Acknowledgments

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ⁱ The Nawiri project aims to sustainably reduce levels of persistent acute malnutrition in Kenya's arid and semi-arid lands.

ⁱⁱ The full report will be available at <https://fic.tufts.edu/research-item/research-and-capacity-building-support-to-the-nawiri-project/>.

ⁱⁱⁱ See GOK and UNDP 2021. Note that the report investigated rising lake levels in all of the Rift Valley lakes in Kenya, so therefore the relative importance of some factors may vary by lake.

^{iv} This change was verified using satellite images of the Omo delta between 1995 and 2022 from the US Geological Survey.

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