

## Background

Children that live in pastoralist areas of Africa are increasingly referred to as some of the most nutritionally vulnerable in the world. Yet, from work going back many decades, we know that animal milk plays a very important role in the diets of these children. Whilst there is considerable research that highlights the importance of livestock and livestock products for the income and the dietary intake of pastoralists in Somali Region, there is little work that describes either the use of livestock-derived products by vulnerable groups or the link between the consumption of animal products and the nutrition of young children.



Figure 1. Boy drinking milk. K. Carlson, FIC

## Research Objectives

1. To examine how pastoralists perceive the links between seasonal variations in dietary intake and the nutritional status of their children.
2. To evaluate the impact of community-defined livestock interventions on child nutritional status during the dry season.



Figure 2. Seasonal calendars. K. Sadler, FIC

## Methods

This work is taking place in two phases. The first phase (now complete) was conducted in Shinile Zone and Liben Zone of Somali Region during 2009. A series of focus group discussions used recognized participatory methods to produce detailed information on how young children are fed, the reasons behind the choice of foods used and on seasonal trends and relationships.

The second phase (to be completed by Sept. 2011) will conduct two cohort studies in the same areas used for phase 1. In each area intervention sites will receive health and fodder support for a small number of milking animals that remain with young children over the long dry season. Control sites will not receive this support. Impact of the interventions will be measured with a nutritional surveillance system and a participatory impact assessment at project end.

## Results (to be finalized by October 2011)

### Contribution of animal milk to the dietary intake of young children:

- Milk, when available, is added to most complementary foods
- During a normal wet season, the average milk intake of a one year old provides approximately 100% of the energy and protein required by a breastfed child of this age

### Importance of seasonality for milk supply and diet quality:

- By the end of the dry season of a 'normal' year, milk intake of young children has reduced by more than 70%. In a drought year this reduction in intake is even more pronounced (Table 1)
- As milk supply decreases, it is replaced in the diet by an increase in grain consumption. By the end of a long dry season or drought year, grain is cooked with little else but water. Such a severe reduction in milk intake is likely to have a serious impact on dietary quality by reducing the amount of high quality protein, fatty acids and micronutrients that young children consume.

### Cano La'an:

Study participants perceived a direct and important association between reduced milk intake and weight loss among their children. They use the phrase 'Cano la'an' to describe 'the suffering due to lack of milk' which is known by local people as the pre-cursor to malnutrition.

In their opinion the most effective way to improve availability and access to milk for young children was clear; that is through the maintenance of the health and nutritional status of their livestock.

*"We like all milk. It satisfies hunger, we become strong and healthy and playful and happy. It is given to us during Gu and Deyr. During Hagaa and Jilaal we get soor [cereal flour cooked with water], tea with milk and ambula [cooked cereal whole grain]. When milk becomes less we get less playful and weak." (a group of young boys in Liben Zone). Photo courtesy of F. Flinton, SOS Sahel*

### Nutritional Surveillance:

- Preliminary analysis is beginning to show some association between growth of young children and season.
- Average weight gain in both areas at the end of the long rains in July (Gu) was 300-400g/month. This is about average for healthy children of this age
- As the dry season sets in, weight gain drops off. The pattern is more pronounced in Dollo during Jul-Sept (Hagaa) when there is very little rain compared to Shinile where rainfall is maintained at a low level.
- During the Deyr (short rainy) season in Oct-Nov there was some weight gain in Dollo, but average weight gain in both areas fell again with the start of the long dry season (Jilaal) in early December.

## Discussion

Data is still being collected, but preliminary analysis appears to confirm some association between rainfall and nutritional status of young children. This has been shown by several authors previously. Based on the data collected during phase 1 of this work, we hypothesize that this is largely associated with changes in access to milk. Over the next few months we will be able to examine the difference in the nutritional status of young children (and other factors) in areas exposed to interventions that aim to maintain access to milk for this group during the dry season compared to areas that do not receive these interventions.

### Acknowledgements

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Table 1. Seasonal calendar of average daily milk intake of a 1 year old child, Liben and Shinile

	Long Rains (Gu)	Short Dry (Hagaa)	Short Rains (Deyr)	Long Dry (Jilaal)
<b>Normal year</b>				
Median ml	850	450	900	220
(range)	(600 – 900)	(250-800)	(450-900)	(100-600)
<b>Drought year</b>				
Median ml	200	200	200	100
(range)	(120 – 600)	(80-400)	(80-450)	(80-160)

Number of informant groups = 6

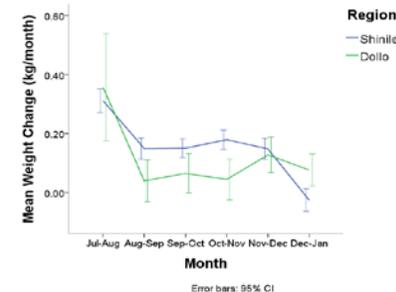


Figure 4: Average weight change of children aged 6 months-5 years in 3 villages of Liben Zone (n=333) and 3 villages of Shinile Zone (n=400): Jul-Dec 2010