



Livestock Surge Approach

Protecting Household Milk Access



Outline of Approach

July 2016



Contents

- 1. Background 1
- 2. The Approach 4
 - 2.1. Risk Analysis and Capacity Assessment 5
 - 2.2. Identify Indicators and Set Thresholds to Trigger Surge 6
 - 2.3. Agree Surge Actions with Stakeholders Linked to Each Threshold..... 7
 - Capacity Surge 8
 - Surge Actions 8
 - 2.4. Build Capacity of System to Monitor Against Thresholds 9
 - 2.5. Implement Surge Action and Provide Surge Support..... 9
 - 2.6. Review, Learn, Adapt 9
 - 2.7. Principles..... 9
- 3. Outputs 10
- 4. Platform 10
- APPENDIX A - Summary of Current Thinking on Livestock and Milk Production in Horn of Africa 12
 - 1. All livestock if rains good and browse available **Error! Bookmark not defined.**
- APPENDIX B – SUMMARY OF ANALYSIS OF MILK ACCESS 14

List of Figures

Figure 1 - Conceptual Model for Livestock and Milk Production Surge

Figure 2 - Schematic of Early Warning Model in Marsabit County

Figure 3 - Hybrid Livestock System Early Warning Early Action Concept

List of Tables

Table 1 - Example of Thresholds for Triggering Surge at community level

Table 2 - Examples of Surge 'Packages'

1. Background

Northern Kenya is a region with immense potential in terms of its livestock production system, chiefly pastoralism. This region forms 90% of the Arid and Semi-arid area coverage of Kenya. ASALs are home to 20% of the Kenyan population and 80% of the livestock. Livestock production is the main source of livelihood for over 80% of the population in this region including Marsabit County. Over the last ten years, the region has suffered recurrent drought and extreme climatic conditions with devastating effects on the environment and livelihoods of communities. Pastoral communities have observed increased frequency of drought with consecutive seasons of failed rains over the past five years. This has put them in a very precarious situation with their livelihoods and way of life threatened. This is exacerbated further by the low capacity of communities and government departments in the region for disaster preparedness, response and reduced coping mechanisms for such eventualities as drought and livestock diseases. While government and donor led initiatives for drought management have improved early warning at county level, community-based early warning and response systems need to be strengthened and widened.

Malnutrition and more specifically undernutrition is a key indicator monitored in humanitarian contexts. It is directly related to the health and productivity of a population and is an indication of mortality risk. The causes of undernutrition are multifactorial. In pastoralist or semi-pastoralist communities, undernutrition has been shown to be strongly related to deteriorating milk availability, access or utilization (Milk matters, 2009) and therefore it is important to develop measures that protect those parts of the household livelihoods which contribute directly to the food security and nutrition security of the family. In the ASALs this means protecting livestock, milk production and milk availability in the markets.

A surge approach is one which allows systems services to scale up and scale down in response to shocks on the system to protect the system from becoming overloaded and allowing it to continue providing quality and efficient services in times of stress. The original concept for the livestock surge model was that it could be based on the Community-based Management of Acute Malnutrition (CMAM) surge model which was piloted by Concern Worldwide in Marsabit, targeting 14 health facilities for a period of 29 months.

Between 2014- 2015 Concern piloted data collection for key livestock indicators to see if the information was easily collectable and to identify if those indicators had a direct or discernible link to milk availability. This would form the basis of development of a livestock surge approach. However, this process proved challenging and the approach was reviewed by outside consultants in 2016. The review found that¹:

- Despite the Marsabit programmes being led by dedicated Concern staff with a good understanding of the context as well as the opportunities and challenges there was confusion in the team on how the surge approach should fit into the rest of the activities supporting the capacity of the County Department of Livestock, Agriculture and Fisheries (MoLAF)
- The agreed upon indicators for the pilot surge approach were based on the monthly reporting by sub-county Veterinary Offices (VOs) and Livestock Production Officers (LPOs). There was no

¹ Refer to the full assessment report for more details

specific data collection or monitoring of trends of these indicators in line with the surge approach. A simpler set of indicators is required and the capacity needs to be built at household and ward level on how to collect and analyse the indicators and decide if a threshold has been reached².

- There was a misconception that the surge model was a package of external support for response activities to be conducted during different phases of a drought. It would be useful to re-orientate the main stakeholders to the concept of a more internal, system based surge model, focused on women at household level
- Basing the livestock surge model too closely on the CMAM one will produce an unrealistic over-reliance on government service providers. The livestock surge model therefore needs to build on the more hybrid system of public, private and community-based services service delivery which the livestock owners have confidence in.
- There are no separate water supplies for livestock and domestic water use so the bulk of the demand for water services are for livestock – the implication is that an effective livestock surge model will also have to include water surge activities
- The pilot surge model was not well linked to the county-wide Drought Monitoring System. Collaboration with NDMA.

The original idea to develop the livestock surge model was based on a series of mixed objectives:

1. Adapt the CMAM capacity surge model to operate within animal health services system in a similar way to human health services
2. To address one of the root causes of under-nutrition by protecting milk availability for children U5 to reduce malnutrition spikes
3. To address failures in early response to early warning in livestock sector (lesson learnt from 2010/11 crisis)

Addressing all three objectives requires a holistic approach with three distinct (and potentially separate) surge models:

1. [Surge capacity mechanism within veterinary services](#) to respond to spikes in livestock disease (outbreaks) and provide prophylactic treatment at onset of a stress periods
2. [Phased \(scaled up\) livestock interventions at household level](#) to protect milk production and access during stress periods
3. [Surge mechanism for sequenced, integrated \(water, range management, livestock production, conflict resolution\) interventions](#) to protect livestock assets and/or provide immediate benefits from livestock resources (offtake).

To achieve its objective and to be an effective process, a re-orientation of the current pilot model was agreed. Stakeholders agreed that the second objective; “... protecting milk availability and access...” is

² Data received from wards/sub-counties was not current or complete. Similarly the raw NDMA data was not complete or of consistent quality. Quality issues make it impossible to perform a regression analysis. At the same time the change in focus of the model (to milk access) means that the data contained in the GoK monthly reports was not providing the right information. Therefore, none of the data provided was sufficiently reliable or relevant to be used to predicting fluctuations in milk availability

the most critical. Therefore, the main focus is probably not actually on the wider herd in the *fora* but on a core group of milking animals remaining with the women and children. This also means the surge model should be focused on the capacity of the household rather than the sub-county livestock unit (model 2 above). However, the model should be embedded within a systems strengthening approach for the whole livestock production and animal health system.

As outlined above the livestock services context is complex and, unlike health, there is currently a very limited public service delivery system on which to build a surge model. Therefore, the livestock surge model should anticipate a range of activities/responses at a local level which are triggered by passing certain pre-defined thresholds at a community/village level. The activities/responses can be delivered by multiple actors and from multiple centers. This is also in contrast to the CMAM model which keeps the nurse at the health facility as central in the model.

This document outlines the revised surge approach and the steps needed in the process to develop it further.

2. The Approach

The livestock surge approach introduces a process and a set of tools for developing the resilience of the livestock system to expand and contract to meet the nutritional needs of the households continuously. Specifically the approach aims to protect women and children's access to milk in times shock and stresses.

The overall aim of the livestock surge approach is to strengthen the livestock services system so that it can provide support to households in times of stress without relying on external emergency relief.

The specific objective is to ensure reliable levels of milk access at household level to maintain adequate nutrition for under 5s and Pregnant and Lactating Women and reduce incidence and peaks of malnutrition.

Based on comprehensive analysis of vulnerability to malnutrition the target group for the surge model is households in settlements rather than family members who move with the main herd in the Fora. This is due to the fact that in most situations the children and women remain in settlements while older boys and men move with the main herd. It is the younger children that are most at risk of undernutrition from a lack of milk availability (see Appendix A for more details on current thinking on livestock and milk production systems in Horn of Africa).

The proposed approach for a livestock and milk production surge model is shown in Figure 1 below. It is important to note that this is a **surge model** which sits within an existing multi-sectoral early warning system (see Figure 3). It is not an early warning/early action system in itself in that it relies on a surge (expansion) within an established, local system for supporting milk production and access. The early warning system supports this by assessing warning indicators to determine stress levels and negotiating external response action when the local surge capacity is exhausted.

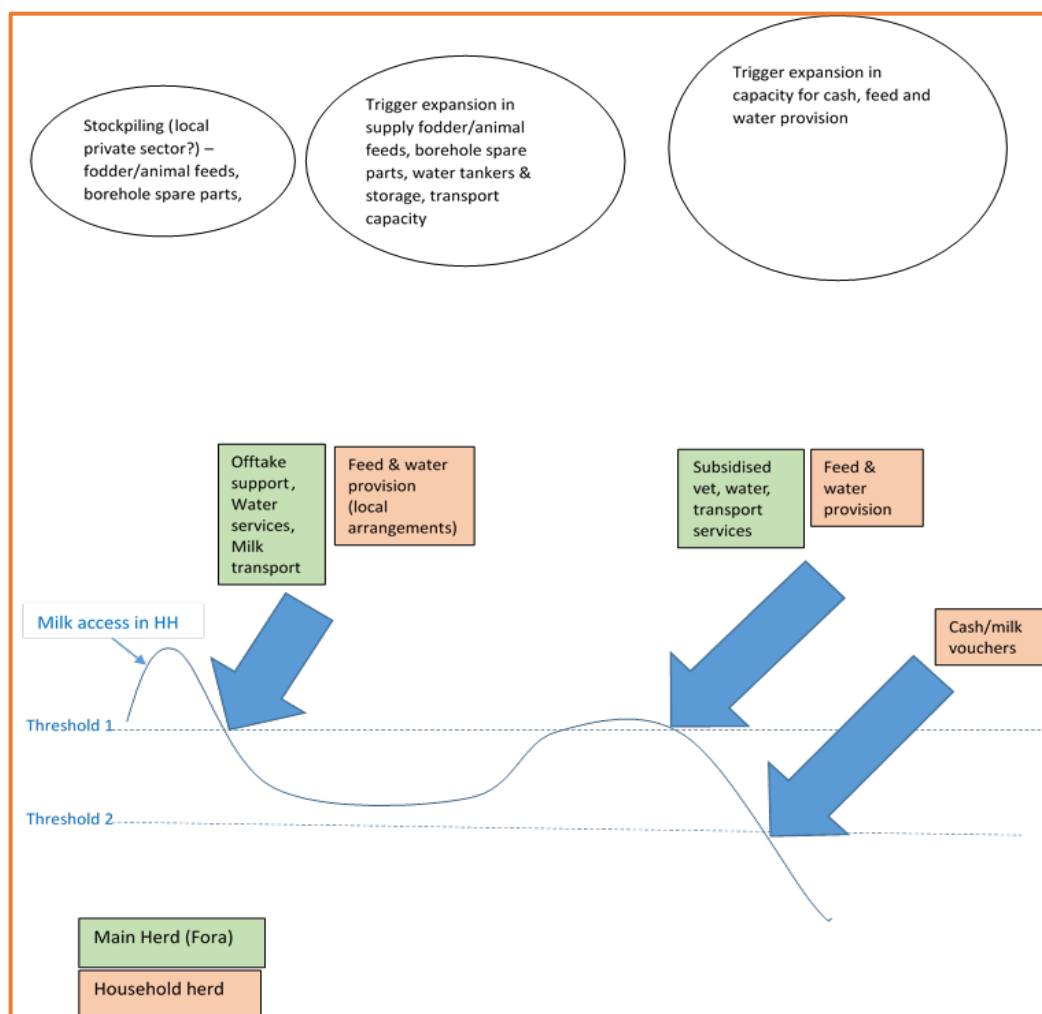


Figure 1 – Conceptual Model for Livestock and Milk Production Surge

2.1. Risk Analysis and Capacity Assessment

Livestock management practices and milk production varies across tribes and within tribes (across individual communities). A summary of current practices based on a recent informal assessment is presented in Appendix B. Similarly the level of risk and resilience to shocks and stresses for individual communities depends on a variety of environmental, social and conflict factors. Concern has explored these through Participatory Disaster Risk Assessment (PDRA) exercises at a number of communities (see individual PDRA reports for more details).

Concern already has a well-established community based disaster risk reduction programme which builds capacity at local level for risk analysis and community action. After a participatory appraisal exercise a particular section of the community chooses to focus on their contextual Disaster Risks and how to address them through locally designed and managed solutions. The community managed disaster risk reduction (CMDRR) group develops a plan of their priority interventions and an implementing committee called the CDMC (Usually 10-15 members) is elected. The analysis from this exercise should be revisited with the community looking at it through a 'surge approach lens' to better understand household risk and in a particular community response to deteriorating livestock condition and milk production at household level.

A system capacity assessment should be carried out in each Ward, looking at the system in a holistic way taking into account all the service providers (public, private, CBOs, LNGOs, social networks). The assessment should result in formation of an informal association of multiple stakeholders for monitoring and response at Ward level. The Early Warning system diagram in Figures 2&3 below shows how the Ward level association is at the centre of the system for early warning and early response. The local surge mechanism will complement and enhance the capacity of this system.

2.2. Identify Indicators and Set Thresholds to Trigger Surge

Child nutrition is the specific objective so the focus of monitoring should be on milk access at household level. Animals are swapped in and out of the main heard in the Fora so monitoring body condition of animals in the household milking herd over time will not be a reliable indicator. Similar to the CMAM Surge, it is recommended that only **one** indicator be selected for monitoring and for triggering response. Having a number of indicators makes it more difficult to agree on triggering.

There are two possible indicators for monitoring milk at a household level, which can then be aggregated at a village level and thresholds established. One possibility would be to monitor number of ‘cups’³ of milk available in the household. Constraints with this indicator is that even if thresholds are set a village level there is likely to be larger intra-village variations in the number of adequate cups per household. The aggregate village level threshold would have to be a certain number/percent of households who have passed a certain threshold.

Another possible indicator to monitor for triggering would be an indicator that captured whether or not there is “enough” milk in the household. Exact wording would have to be refined at local level. This would eliminate the problem of intra-village variation in how much milk is adequate per household but has some limitations with respect to its respondent subjectivity. An aggregate threshold would be a certain number of households not having “enough milk.”

Thresholds of milk access to trigger response have to be developed through a participatory process at community level. Different groups have different coping mechanisms and households with young children have their own decision making processes over use of milk in the household, usually dividing it up between adults requirements for tea and under 5 year olds requirements for milk to drink as well as considering needs of young livestock in the milking herd.

A sample of possible thresholds to trigger surge support is as follows:

Threshold	Indicator level (average/household across community)	Corresponding NDMA level
0	>6 cups	
1A	2 cups	Alert
1B	1 cup	Alert
2	0 cups for > 1 month	Alarm

Table 1 – Example of Thresholds for Triggering Surge at community level

³ This should be a locally recognized measurement agreed with the individual communities. Initial discussions suggest that a standard ‘cup’ of around ¼ litre capacity is well recognized by the communities in Marsabit

Thresholds should be regularly reviewed to ensure they are relevant and that their sensitivity is appropriate for the context. This is further discussed in section 2.6.

2.3. Agree Surge Actions with Stakeholders Linked to Each Threshold

The stakeholders in setting surge actions for each threshold are first the community members and secondly the Ward level association. In most cases the first surge action for the Alert stage (Threshold 0) are normal household and community coping strategies, which could include:

Positive

- Transporting milk from the animals in the Fora (while for a is less than half day walk away or transport available)
- ‘Borrowing’ milk or credit from relatives and/or local shops
- Selling livestock for cash to buy food and milk

Negative

- Using milk for tea only (no drinking of raw milk)
- Trekking longer distances to get water and grazing

Note that actual actions per threshold should be defined in the participatory development phase and they are locally defined.

Since Milk access depends on condition of livestock in Fora (directly for milk production and indirectly for sale price and cash for milk/food purchase) it is necessary to consider surge actions at both household and Fora simultaneously.

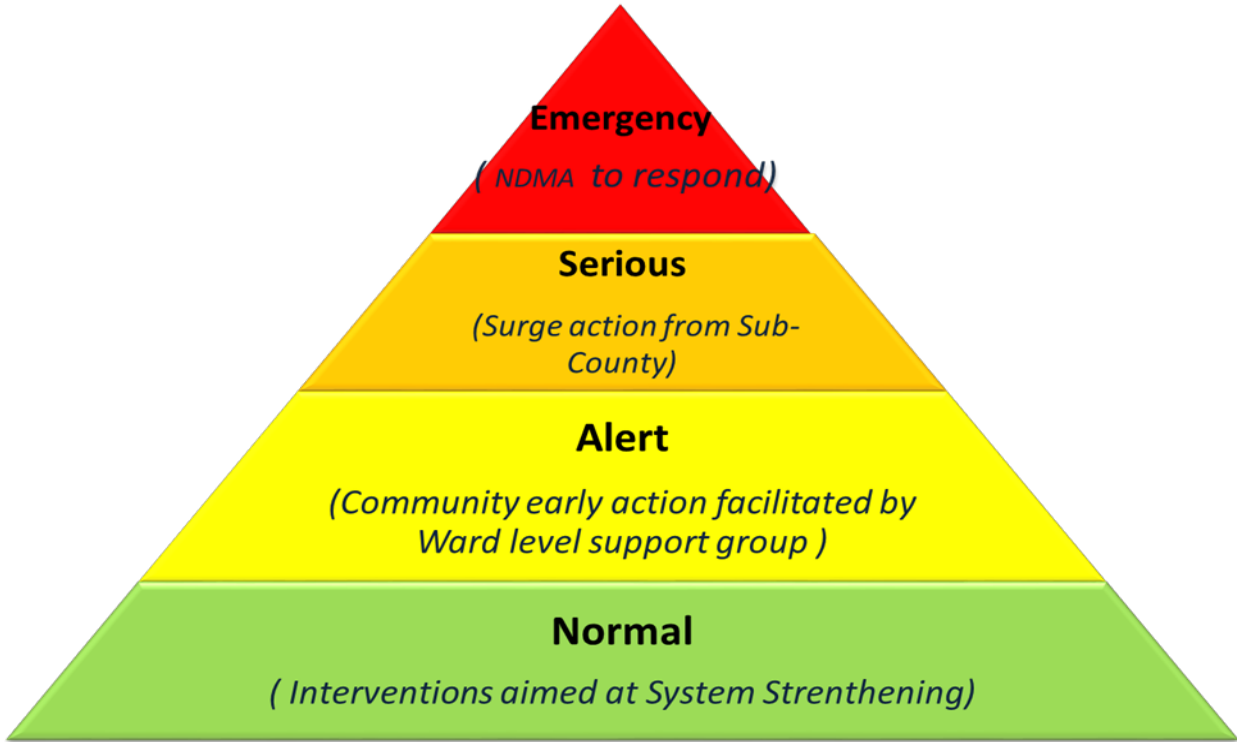


Figure 2 – Schematic of Early Warning Model in Marsabit County

The surge package at each thresholds will be a combination of :

1. Capacity surge to add more people and resources into the system to support surge actions
2. Specific surge actions to directly benefit affected households

Capacity Surge

This should include changes in deployment of government staff to crisis affected areas, stockpiling and stimulating the market to expand quantities of key resources (cash, feed, water) and changes in the operating procedures of the system, both at household level and for the Ward level and County level actors.

Surge Actions

Surge action should, where possible, follow the Livestock Emergency Guidelines (LEGS, 2012). According to LEGS livestock related actions in an emergency fall into three broad categories:

1. To provide immediate benefits to crisis-affected communities using livestock resources (e.g through facilitating offtakes from the Fora herd, providing access to affordable processed milk etc)
2. Protect the key livestock assets of the crisis affected communities (e.g. through provision of supplementary feed and water for the milking herd)
3. Rebuild key livestock related assets of the crisis affected communities (e.g. animal health interventions and restocking with improved breeds)

Since the specific objective of the surge approach is to protect milk access at the household level all three categories of action are important but the first should be the priority.

Sample surge packages are shown in Table 2 with a note of caution that these are samples only. The actual packages should be context specific and agreed by the community, with the agreement of the Ward level actors.

	Threshold 0	Threshold 1 reached	Threshold 2 reached	Comments
Capacity Surge	Community coping capacity activated More regular monitoring of indicators & preparedness	Additional staff capacity to Ward level. Expansion in supply fodder/animal feeds, borehole spare parts, water tankers & storage, Transport capacity, More regular monitoring of indicators & preparedness	Additional staff capacity for implementing and monitoring cash, feed and water provision	
Surge Actions	Transporting milk from the animals in the For a 'borrowing' milk from relatives and/or local shops Selling livestock for cash to buy food and milk	Offtake support (Fora), Water services, Subsidised milk transport	Cash/milk vouchers Feed and water provision for remaining animals	

Table 2 – Examples of Surge ‘Packages’

Cash is already a major part of the coping strategy and considered the most efficient way to get milk/food to households during times of stress. Surge for marketing (offtake) for main herds and cash transfer for the households with smaller herds should be part of the surge model.

2.4. Build Capacity of System to Monitor Against Thresholds

The milk access indicator should be monitored by a selected female in each (or sample) households. Then a member of the community CMDRR committee (probably the livestock disease monitor) should be responsible for aggregating the data from the households in the community coming up with an average for each settlement.

The Ward level stakeholders facilitated by the LPO monitor the data from the settlements in the Ward and agrees when Thresholds have been passed and that the pre-determined package of surge actions should be activated. Importantly the Ward level stakeholders should also monitor the data to determine when the surge support can be scaled down. Training and coaching for the monitors at household, community and Ward level is required.

2.5. Implement Surge Action and Provide Surge Support

The success of the surge action and surge capacity depends on the strength of the system in 'Normal' times. It is therefore built on a system strengthening approach which development of the system to provide, e.g. fodder production, quality animal health services, and sustainable water services.

Surge action starts at the household and in most cases will be part of normal coping strategies and not require external assistance. Once the next Threshold is passed and a package of support is triggered this should be delivered by the most efficient combination of actors (public private and civil society). The roles and responsibilities of all parts of the system should be agreed in advance and will be context specific (by Ward)

For the surge capacity to be effective there needs to be understanding of the approach at all levels and agreement for surge human resources to be provided from county and sub-county levels when required.

2.6. Review, Learn, Adapt

Setting realistic Thresholds should be an iterative process. During the first stage of implementation the Ward Association should monitor how often the Thresholds are reached and surge is triggered. A triggered surge in every dry season would suggest thresholds are too high. No triggered surge in several years would suggest the thresholds are too low. Hence the sensitivity of the thresholds as a means of predicting an alert or serious situation at community level should be reviewed after a period of time. The trends of the milk access over time should also be reviewed against the timing of surge support so the stakeholders learn whether the surge has had an impact

2.7. Principles

The surge approach is based a number of core principles:

- A. The approach should be **household based** with indicators measured at a household level and surge triggered first at community level
- B. The system in which the surge operates is a **hybrid service delivery system based on strong public private partnership**
- C. The surge approach operates as an **'add on' to a comprehensive system strengthening approach** which aims to build a sustainable service delivery system to support livestock production, milk production and related markets and industries (such as milk processing)
- D. Reducing trekking distances (bringing water closer and ensure reliable supply close to grazing) is critical for maintaining milk production so **access to water should be part of the surge model**. This should be based on comprehensive understanding of the environmental and conflict risks.
- E. The approach is **aligned with existing NDMA system** and use a common set of indicators but with refined thresholds and surge packages allow the system to respond locally to smaller, localised stresses not just county-wide emergencies

3. Outputs

The anticipated outputs from the next stage of participatory design and testing of the surge model are as follows:

- Defined Thresholds and Surge Packages for each community
- Capacity at household, community and Ward level to monitor and analyse a range of indicators
- Memorandum's of Understanding between public and private sector and civil society actors laying out roles and responsibilities when Thresholds are crossed (who does what when).

4. Platform

The main platform for centralizing, analyzing, and triggering and coordinating response should be the DRR committees. They are existing committees which have seen some investment by Concern and they could play a valuable role as the central role in the livestock surge model. The DRR committee should actively interact with the ward livestock services association for the triggering of response.

The way in which the surge model interacts with the wider early warning-early action system is shown in Figure 3 below. This shows how the different actors come together in a 'hybrid' model based on the capacities in different wards.

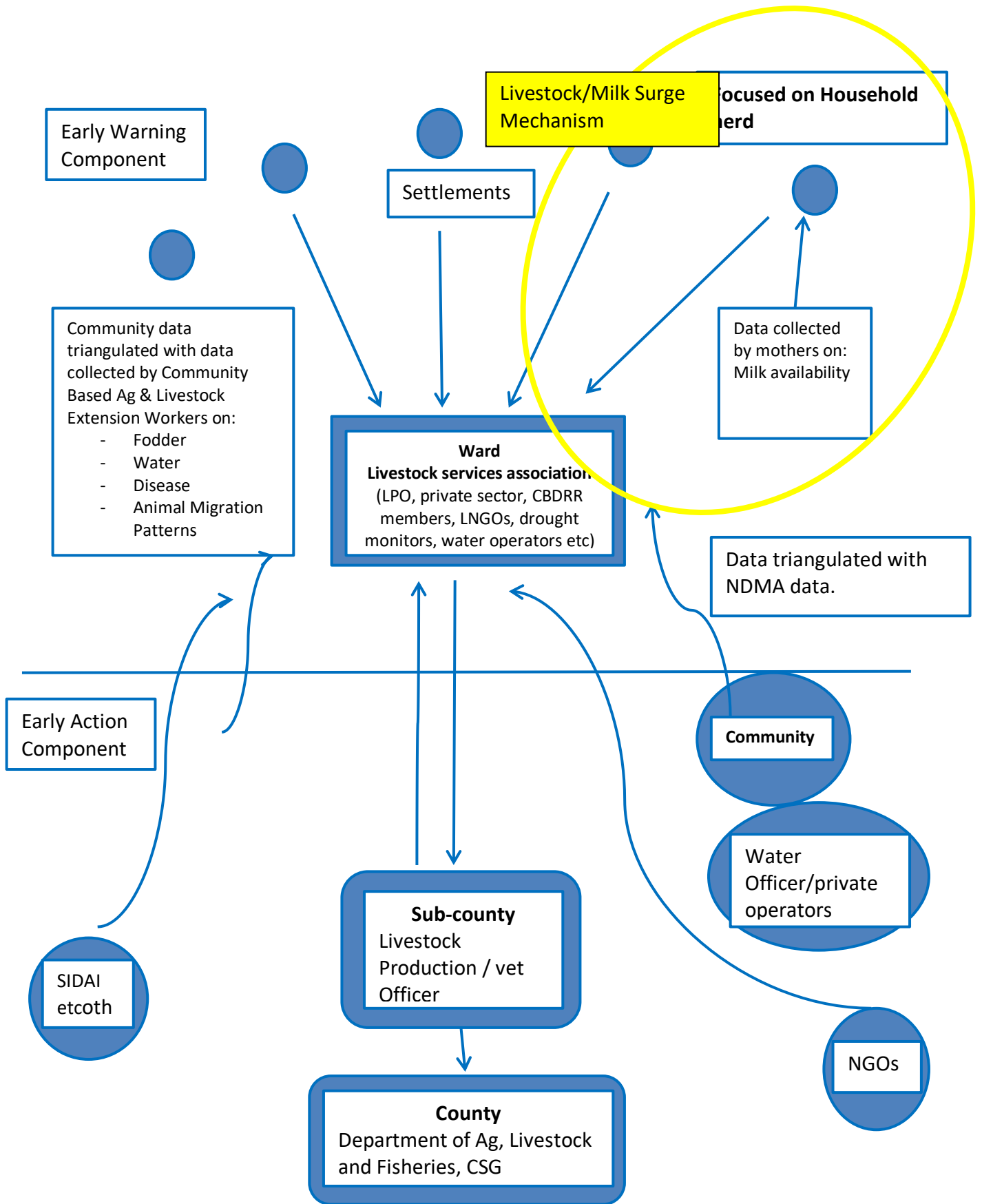


Figure 3 – Hybrid Livestock System Early Warning Early Action Concept

APPENDIX A - Summary of Current Thinking on Livestock and Milk Production in Horn of Africa

Marketing

- There is rising consumer demand for milk products, therefore some milk is often converted for saleable commodity instead of direct consumption. Especially among poorer households = trading protein for calories
- Transport infrastructure is improving so pastoralists can move and sell animals or dairy products in markets and buy other food
- Women may find informal markets more beneficial - goat milk, eggs, honey, manure (these can also be used at home) - as the payments can be more regular than formal markets
- The goat value chain is much shorter than the cow milk value chain, with more varied participation of women. Goat's milk was consumed at home, sold to neighbours (mainly by women) or sold to a collection centre (mainly by men)

Nutrition and Dietary Diversity

- Milk allocation depends on climate regime, access to markets, commercial demand for milk and meat (which is rising) and family wealth
- Pastoralists depend on milk for protein and although it is low in calories it produces more energy and sustains more people per unit area than meat (which is sporadically available when slaughtered)
- 50% of dietary energy comes from milk and milk products for Masaai, Rendille and Turkana
- Children are often prioritised in terms of milk consumption in Rendille communities as it is seen as an important food.
- Processed milk products are not very common in African pastoralist communities (their nutritional benefits include higher density of protein and minerals like calcium, probiotic qualities of yoghurt etc)
- Surplus milk can sometimes be used to maintain social ties between and within communities (instead of being sold) as a means of hospitality and also future insurance. This means children can sometimes rely on milk from other households.
- Herd management systems changing (sedentarisation) causing changes in diets and therefore health and nutrition
- Pastoral children's diets made up of more milk as they have access to animals while sedentary communities are often separated from livestock which spend most time in distant *fora* camps.

Sedentarisation

- Rendille and Ariaal pastoralists demonstrate less variability in nutritional status during dry season in comparison to settled counterparts

- There has been a global trend of sedentarization of pastoralists either partially or completely.
- Sedentary communities are worse off in relation to child nutrition and growth patterns (Rendille Sedentarization Project (1990s))
- Researchers found that settled Turkana communities had reduced fertility, increased morbidity (mostly malaria) and increased child mortality. Settled children were more stunted than nomadic ones but settled children over 5 were heavier (explained by supplemental feeding in schools - more carbs). Nomadic Turkana women are taller, heavier, and had lower blood pressure
- Benefits of sedentarization include increased access to public education, health facilities, larger markets and the changing role of women in all three.

Livestock

- Livestock species produce different quantities and qualities of milk. Pastoralists keep a mixture as a strategy of maintaining an annual cycle of milk production because they produce different amounts of milk during different times
- Droughts and crises result in loss of large livestock and reliance on low-yielding small stock (sheep and goats).
- In pastoralist societies, shoats receive little energy and/or water and the environmental conditions are often extreme. They are hand milked by women and children (although low milk producers) and competition for milk between offspring of the animals and humans exist.

APPENDIX B – SUMMARY OF ANALYSIS OF MILK ACCESS



*Milk transferred from Fora to settlement by motorbike or donkey



Summary Conclusions from Field Assessment

- Milk Demand always exceeds Milk Supply except in good rainy season
- More livestock available for longer periods in Samburu/Rendille communities where hill grazing and permanent water
- Gabbra more innovative about getting milk from Fora to households (more camels – more milk in Fora?)
- Very few examples of feeding livestock at settlements (except Samburu – received some dairy meal in drought).
- Livestock owners not convinced about feeding fodder because fodder not available in market
- Milk production decreases with trekking distances to water
- **Main coping strategy is move livestock for Fora then sell selected livestock to get cash to buy packet milk for household – This works for majority but not for those with very small herds!**

Implication of milk management analysis for surge model design

- Livestock management practices and milk production varies across tribes and within tribes (across individual communities). So....
 - Difficult to design single surge model that will work for whole system
 - Need to develop model which fits with specific livestock and milk production system in each area (maybe each community??)
 - Thresholds for triggering surge support will be context specific (maybe community specific) and need to be **developed through a participatory process at community level.**
- If child nutrition is overall objective **the focus of monitoring should be on milk access at household level** not livestock body condition. Animals are swapped in and out of Fora so monitoring body condition of animals in household milking herd will not be reliable indicator
- Milk access depends on condition of livestock in Fora (directly for milk production and indirectly for sale price and cash for milk/food purchase) so **surge model needs to be built on system strengthening for broader livestock production system**
- Pastoralist livelihood systems are well developed, adaptive and innovative and economic development of county revolves around this. Livelihood programming in rural areas should **strengthen existing functional system** rather than looking to build new systems (e.g. government services) and alternative livelihoods.
- Cash is already a major part of the coping strategy and considered the most efficient way to get milk/food to households during times of stress. Surge for marketing (offtake) for main herds and cash transfer for the households with smaller herds should be part of the surge model.
- Reducing trekking distances (bringing water closer and ensure reliable supply close to grazing) is critical for maintaining milk production so **expanding water services should be part of surge model**