

xecutive Summary

Feed and nutrition security exists when all livestock, at all times, have physical, social and economic access to feed which is consumed in sufficient quantity and quality to meet their dietary needs and feed preferences, and is supported by an environment of adequate sanitation, health services and care, allowing for a healthy and productive life. Feed and nutrition insecurity among livestock in Kenya has persisted overtime mainly due to; natural causes, economic situation and human activities.

These guidelines identify critical areas to improve ruminant nutrition in the face of climate change considering the essential and complementary role the feed sub-sector has to play for the sustainability of the livestock sector. The guidelines has five chapters covering the following:

CHAPTER ONE introduces the general overview of the livestock feed production including the current situational analysis. Livestock feeds and feeding is a key factor influencing animal production, health and reproduction. Availability of sufficient quantity and quality feeds that are accessible and affordable by livestock producers are key determinants of sustainable livestock production and productivity. Inadequate feed availability, access and utilization remain as key constraints to sustainable livestock production. Drought, which is usually associated with water and feed scarcity, is a frequent phenomenon and is a critical driver of feed and nutrition insecurity in Kenya.

CHAPTER TWO describes the drivers that influence the key pillars of feed production, utilization accessibility and stability. The main drivers of feed and nutrition insecurity include; poor rainfall performance, drought, overstocking, pests and diseases, land degradation, insecurity amongst others. An interaction of these factors has led to unsustainable feed availability, access and utilization leading to loss of body condition and high livestock mortalities.

CHAPTER THREE identifies key four pillars of feed security. These are availability, access, utilization and stability. The availability pillar comprises production, reserves, markets and imports components; whereas the access pillar consists of physical, social and economic components. The utilization pillar is determined by the level of value addition and processing, feed safety, quality, palatability, digestibility, hygiene, storage, and feed devoid of anti-nutritive factors; while the stability pillar covers the sustainability of the other pillars, which is manifested in the feed and nutrition outcomes which include - feed consumption index, body condition score and livestock mortality rates.

CHAPTER FOUR gives specific intervention options. They seek to flag out potential business opportunities for investment along the feed value chain. The intervention options under each category address the needs of the

target beneficiaries (individual farmers, pastoralists, agro-pastoralists/ groups, public and private service providers (extension agents), investors, various ruminant production systems, identified gaps for economic viability, and sustainability. These interventions are ordered thus - technical, institutional, policy environment as well as climate change approaches. The implementation of the interventions is expected to translate into improved feed and nutrition outcomes which include feed consumption index, body condition score and livestock mortality.

CHAPTER FIVE outlines the feed and nutrition security outcomes (cost savings, improved profitability, enhanced resource efficiency, enhanced competitiveness, animal welfare benefits, reduced environmental impact, improved resilience to climate change and, reduced overgrazing and land degradation.

In order to institutionalize feed and nutrition system in Kenya, a National Feed Inventory and Feed Balance Assessment which is a new and emerging innovation in the animal- agriculture sector, was conducted. The assessment results showed that Kenya is producing 46 million metric tonnes (MT) of DM as animal feed resources against the national feed requirement of 55 million MT of DM indicating a deficit of 9 million MT. The study further showed that competitive feed uses (alternative uses, wastages and losses) accounted for 46 % of the land feed production potential of 46 million MT of DM equivalent to 21 million MT of DM. Therefore, on actual basis, the amount of feed available to the animals within the country is 25 million MT of DM against a national feed requirement of 55 million MT as DM resulting in a 60 % feed deficit for the country, hence feed and nutrition insecurity.

