

This document is extracted from “Good DRM practices for Belizean small farmers and an approach at inclusion and acceptance on a pilot basis, to promote Disaster Risk management in the agriculture sector”, by Holder, G.D., FAO/MAF Disaster Risk Mitigation Project TCP/BZE/3201.

Improved forages

Place: All Amish farming systems, and small farms throughout the country, ranging from Crique Sarco in the highlands, high rainfall southern region, to the low rainfall region of Corozal in the north of Belize. Adaptation in the northern districts has been slow as the easy availability of sugar cane as forage has reduced the need for exotic grasses.

Historical perspective: Early efforts at pasture improvements concentrated on Jaragua grass (*Hyparrhenia rufa*), African star (*Cynodon nlemfluensis*) native Guinea grass (*Panicum maximum*), Elephant grass (*Pennisetum purpureum*) and a dwarf cultivar of the same. In the late seventies the *Brachiaria* spp. were introduced with *B. humidicola* in the lowlying wet areas, *B. brizanthia* and *B. decumbens* on well drained soils. More recently Mombasa (*Panicum maximum cv Mombasa*) on account of its high crude protein content has been the popular choice for pasture expansion, with other species in special situations, eg. *Setaria (Setaria spaelata)* for low lands, *Andropogon (Andropogon gerardii)* for low fertility soils.

Hazard context: Drought, high rainfall, and floods.

Description: Native forages are eliminated, and the area replanted with improved forage specie suitable to the specific environmental conditions and feeding system.

Suitability: All improved ruminant production systems in livestock and/or mixed farming systems.

Possible beneficiaries: All small farming systems involving ruminant production, tin smiths in the production of small hand planters agro input suppliers.

Cost estimate: Involves cost of land preparation, seeds/cuttings, and planting. Typical costs run from \$200-400 /acre with the higher cost inclusive of two cycles of fertilizer at a rate of one 100lb.sk/acre/cycle.

Implementation: Land is prepared just before the rains start in mid-late May, with planting in early June when soil moisture availability is in the upper range of available moisture.

Maintenance: Removal of broad leaf species by chopping, and one cycle of fertilizer per year at a rate of 100lbs/acre. The composition should be based on a soil analysis, once every three years, or knowledge of the soil type.

Benefits: Higher nutritional supply throughout year, faster recovery after disasters, shorter development periods, and faster returns on livestock.

Institutional support: More training in forage selection and pasture management, use of forage protein banks to supplement during periods of declining forage quality, fiber supplements during periods of high rainfall when water content of forages is high, and supplemental feeding systems.