

The Use of High Quality Forages to Build Climate Resilient Livestock Production Systems

Strengthening the Climate Resilience of Caribbean Agriculture
Livestock Sector

Outline and Objectives

Outline

1. Definitions- of key terms
2. Impacts of climate change on forage feeding systems
3. Value of high quality forage in combating CC impacts
4. Strategies towards building resilience in forage feeding systems.

Objectives

1. Assess current factors affecting forage production.
2. Discuss strategies towards improving forage feeding systems.
3. Share knowledge/experiences with ongoing practices.



Definitions / Livestock Feeding Systems??

- Grass vs Forage/Fodder – Distinction between “grass” and forage.
- Forage-Based Feeding System vs Conventional Feeding Systems
- Forage quality
- Forage/Pasture management “Fun Facts”
- Forage/Fodder Conservation



High Quality Forage ???



- Nutrient content
- Palatability and Digestibility
- Presence of Anti-nutritional Factors



Impacts of Climate Change on Forage-Based Feeding Systems

- Rain-fed conditions affect systems due to variability in rainfall, intensity of rainfall events, droughts/floods. Increased temperature also affects nutrition partitioning and maturation rates in plants. Sea level rise and salt water intrusion can also impact on species survival in low lying pasture lands.
- Forage is a crop and is susceptible to all elements of climate change.
- Forage quality and availability fluctuates year round.

Impacts of Climate Change on Forage-Based Feeding Systems

- Forage production is highly dependent on rain-fed conditions and is also impacted by increased temperature.
- Economic climate change saw further price increases in concentrate feeds by as much as 20% since the start of 2021.
- Availability of byproducts and other feed ingredients is limited.



The value and role of high quality forages in combating challenges with forage feeding systems

	Forage Feeding	Conventional	Basal diet with Supplements
Ecological	Promote carbon sequestration, reduce GHG emissions	Little opportunity for nutrient cycling. Higher levels of GHG emissions	Potential to regulate GHG Emissions with appropriate rations
Economic	Sustainable cost reduction in long term. Savings of over 30%.	Unsustainable, price takers in feed market. Higher production costs.	More efficient utilization of expensive feeds and other supplements.
Animal Production	Variable performance dependent on forage quality. Lower productivity of animals	High Potential for nutritional deficiencies. High performance output.	Optimized rations balanced to adequately meet nutrient requirements (TMR/PMR)

The value and role of high quality forages in combating challenges with forage feeding systems

- Examples of economic opportunities from local forages
 - Leucaena leaves dried can be valued at approximately 200 USD/Tonne
 - Hay bales from pangola grass are valued at approximately 220 USD/Tonne
 - Sugarcane fresh cut forage is valued at approximately 80 USD/Tonne
 - Larger producers outsource hay and silage during periods of low forage availability, that offers opportunities for import substitution.
 - Do not ignore the cost of cut and carry forage from roadsides and other naturally occurring fodder banks.

Case Study: Sugarcane value chain Intervention



Sugarcane
Transformation
Model



Value-Added Products from High Quality Forages

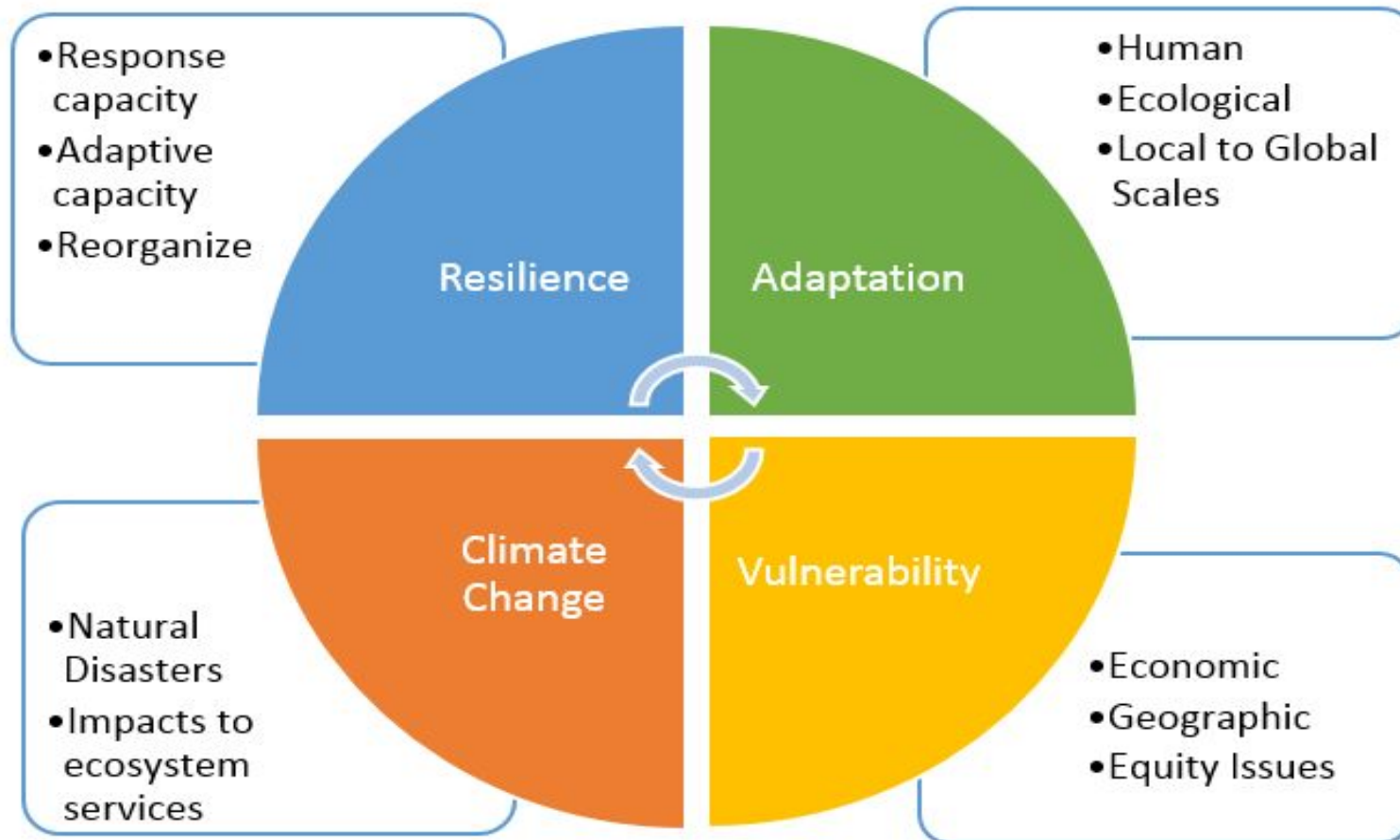


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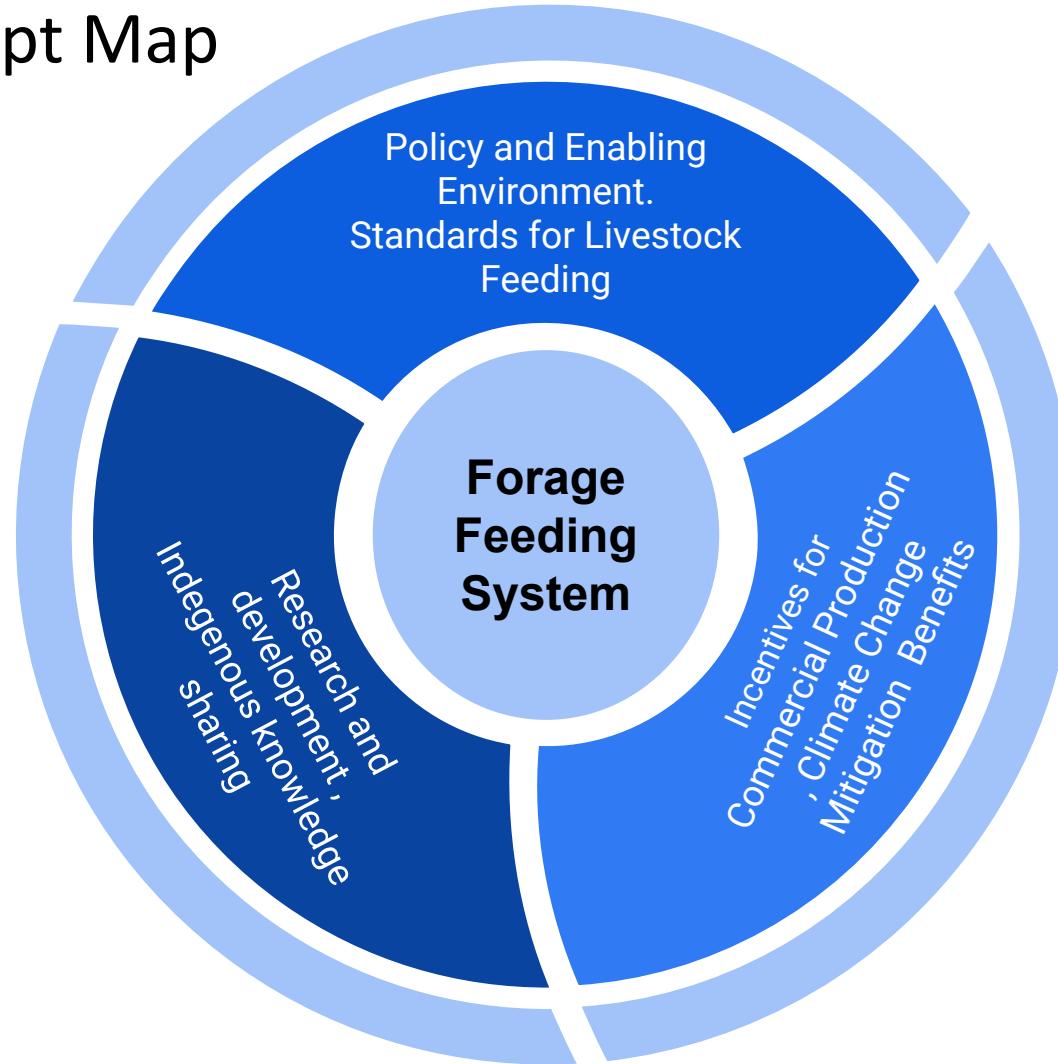


Green Chop

Strategies towards building climate resilient forage feeding and utilization systems



N.A.F.F.I - Concept Map



The National Animal Forage Feeding Initiative

Strategies for Immediate Adoption

- Identify forage resources within the immediate environment
 - Allow emergence of naturally occurring silvopastoral systems
 - Electronic Database of Tropical Forages being utilized focus on indigenous knowledge
 - Dissemination of information on forage production and utilization
 - Expand on opportunities to conserve forage via ensilage, drying, baling, pelletizing etc.
- Dedication of idle lands for fodder banking/ forage farming
 - Promote commercial forage production as economic opportunity

Food Security = Animal Feed Security



Break out Session

- Identify barriers that exist in accessing forage material for livestock feeding.
- Build and share knowledge base on forages: Production, Management, Conservation/Storage, Utilization.
- Experiences of researchers, producers and participants working with forages across the region.



Gas prices too high
Had to drive my
Toyota Cowrola

