

Report on focus group discussions on cattle breeding in Matiguas and Camoapa municipalities, Nicaragua

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November 2015

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Introduction

As part of the project that seeks to increase the productivity of dual-purpose cattle in Nicaragua through use of appropriate breed types and application of best husbandry practices (<https://ilri-anagr.wikispaces.com/ILRI-CIAT-BOKU+Project+-+Nicaragua>), focus group discussions (FGD) were held in two sites Matiguas and Camoapa to consult and have farmers discuss issues of relevance in the breeding and reproductive management practices related to their cattle. The FGD also sought to identify constraints and opportunities in cattle breeding and management practices in order to inform possible intervention strategies to help improve productivity at farm level. In Matiguas, the group consisted of 16 farmers, 2 women and 14 men, while in Camoapa the group was comprised of 17 farmers, all men. The farmers that participated in the FGD belonged to one of three categories based on the number of cattle they owned as follows: owning more than 50 animals (38% of the participants), owning 25-50 animals (46% of the participants), or owning less than 25 animals (16% of the participants).



Traits of importance in cattle reared

The farmers identified which traits are important for them in bulls and in Cows as:

<i>Traits of important in bulls</i>	Matiguas	Camoapa
1. Large in size	✓	✓
2. With good temperament, not aggressive	✓	✓
3. Testicles need to be large in size and not pendulous as this was related to the capacity of a bull to produce semen (in the minds of many of the farmers, testicle size was seen to greatly influence the characteristics of the udder in cows sired by the bull)	✓	✓
4. The bull must come from a good parental line, with both its sire and dam having desirable characteristics	✓	--
5. No horns (polled animals) are desirable	✓	--
6. The bull needs to be active and have good libido	✓	✓
7. The bull needs to have a sturdy conformation as determined by the strength and stature of the front limbs of the animal	✓	--

<i>Traits of important in Cows</i>	Matiguas	Camoapa
1. Large in size, able to produce offspring that will grow large and fetch a good price on the market if sold for beef	✓	✓
2. The animal must have good udder characteristics which include <ul style="list-style-type: none"> ○ Good teat size – long and soft to facilitate milking of the animal ○ No defects in the teats- no supernumerary teats, all 4 quarters in good condition 	✓	✓
3. The cows need to have milk production potential of 8 litres per cow per day in the first lactation	✓	✓
4. The cows need to be young and agile	✓	--
5. The cows must come from a good parental line	✓	--
6. The cows need to have a regular reproductive cycle and present visible signs of heat (silent heats are not desirable)	✓	--
7. The cows need to be docile and not aggressive	✓	✓

Breeds of dairy cattle and the most important traits in the breeds

The main cattle breeds kept by the farmers and the important traits for each breed are presented in Table 1

Table 1. Main cattle breeds kept by farmers and the traits of importance in each breed

Breed of animal	Traits of importance	Number of farmers rearing the breed	
		Matiguas	Camoapa
>50% Brown Swiss & < 50% Brahman (Dual purpose)	Large body size High milk yield Good adaptability to environment Does not fall sick easily Produces good male calves for fattening Has good grazing behaviour	11 men, 1 woman	14 men
75% Holstein & 25% Brahman	Good milk production Large body size Low incidences of mastitis Adaptable to environment Good temperament	6 men, 1 woman	17 men
75% Jersey & 25% Red Holstein	Good milk production Good quality of milk—higher butter fat content Lower feed requirements Smaller body size	1 man	
Holstein X Brown Swiss (with some minimal Brahman)	Good milk and meat production Good size		13 Men
Gir (Dual purpose)	Large size of animal Fast growth rate Good muscling ability Has an early age at first calving Good milk production Good temperament	2 men	
75% Girolando & 25% Brown Swiss	Good milk production Good size Good temperament Large size of animal	1 man	
Simmental 50% x Brown Swiss 50% (Dual purpose)	Good Size Good milk production		2 Men
Indigenous Creole	Not docile Very adaptable Small size Low milk production Good fertility		17 Men

The farmers noted that they did not know about productivity levels of other breed-types of cattle, and would be interested to learn about them.

Mating methods and replacement options

Mating methods

The use of Artificial Insemination (AI) as a mating method was known by all the livestock keepers in the groups, however only 4 of the farmers in Matiguas actually use AI. None of the farmers in Camoapa currently use AI, although 3 of them mentioned that they had used AI in the past. All the farmers noted that they still prefer to use bulls as illustrated in Figure 1. Those who used AI only use it for exotic and cross-bred animals. The farmers all kept their own bulls to serve their cows and it is not common for farmers to use a neighbour's bull to serve their animals

AI in Matiguas is mainly provided through projects implemented either by the government or through NGO's, notably Alba Genetica. These farmers noted that six years earlier they had good experience with the use of AI through a project funded by Swedish International cooperation called FONDEAGRO.

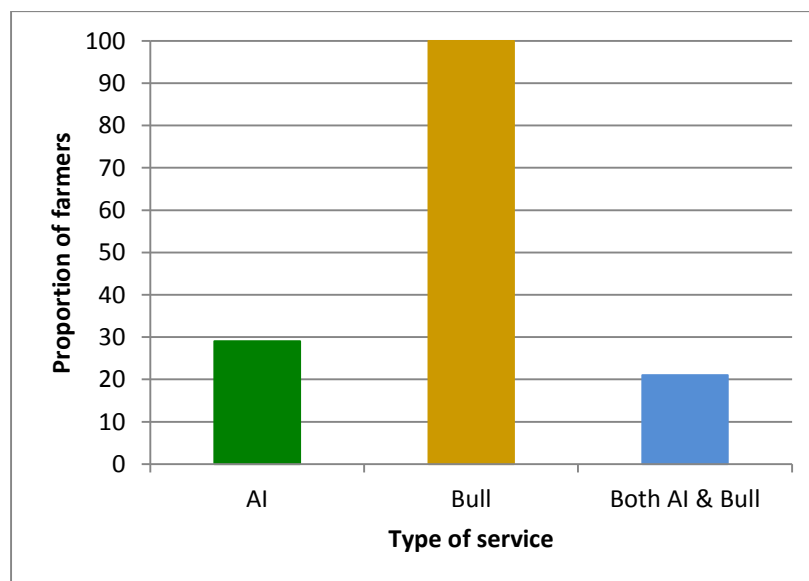


Figure 1. Number of producers using AI vs Bull service

Low adoption of AI within the two sites was generally due to challenges listed as follows:

	Matiguas	Camoapa
1. High cost of AI Service	✓	N/A
2. Limited access to timely AI service –(In Matiguas farmers noted there was no capacity to provide timely AI as there was only one semen storage tank in the area. In Camoapa farmers noted that there were no semen storage facilities, nitrogen tanks were not available, and even if they were there was no source of nitrogen)	✓	✓
3. Conception rates following use of AI are low	✓	✓
4. Detection of heat in cows served using AI was very poor	✓	✓
5. AI service providers were few and live long distances away from farms (mainly live in larger towns)	✓	✓
6. Farmers did not see advantages of adopting AI and noted that service of their animals by their bulls was relatively “free”. (None had factored in all the costs involved in rearing and maintaining bulls)	✓	✓
7. Limited knowledge on all the AI procedures and no skills in serving animals using AI. The farmers did not want to depend on others when it came to serving their animals, hence did not adopt AI	N/A	✓



It was evident that the farmers were aware of how AI could help improve productivity of their herds, and indicated that if the service was available, efficient and cost-effective, they would adopt and use AI. They would however need training in the practice of AI. In Matiguas, some farmers noted that they had previous negative experiences with the use of AI and would not readily give up on having a bull available on their farms to serve cows coming into heat.

The farmers noted that when using bulls

1. Bulls were efficient in detecting heat and all animals served generally calve down as anticipated
2. Bulls are cheap to use and no additional technical training is required by the herdsmen
3. The main cost is usually in purchasing of a good bull to use in a herd.
4. Once mature, bulls are generally retained to serve cows on the farms for 4-5 years
5. The farmers try to prevent inbreeding by using a different bull for mating young heifers

Decisions on which method of mating animals adopted by the farmers were generally made by the farmers in consultation with their spouse.

The farmers did not find it a challenge to obtain new or replacement animals as most female animals reared were born and raised on their own farms. Young bulls were also readily available for purchase either from neighbouring farms or from farms in other municipalities.

Farmers mainly learnt about cattle production and management through projects implemented by NGO's. There was also some training provided through technicians working for dairy cooperatives.

Seasonal changes in rainfall and pastures against the times of calving

Using seeds piled proportionately to reflect the magnitude of each factor, the participants mapped out the distribution of rainfall, pastures and the main calving periods within the two municipalities. Table 2 provides a representation of the output of the mapping exercise in Camoapa.

Table 2. Representation of mapping of rainfall, forage availability and periods of calving for Camoapa

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall pattern (Score 0-12)	5	5	3	0	6	7	10	10	10	12	6	6
Forage availability (Score 0-9)	6	5	5	3	1	0	0	6	9	9	9	8
Calving Score for number of calves born (0-3), multiplied by number of farmers (n) indicating calves born in a specific month	17	10	7	3	5	4	4	4	7	5	10	15

The tally for months when most animals calved as indicated by the farmers using proportional piling of seeds in relation to the rainfall pattern and availability of forage are illustrated in Figure 2 for Matiguas and Figure 3 for Camoapa.

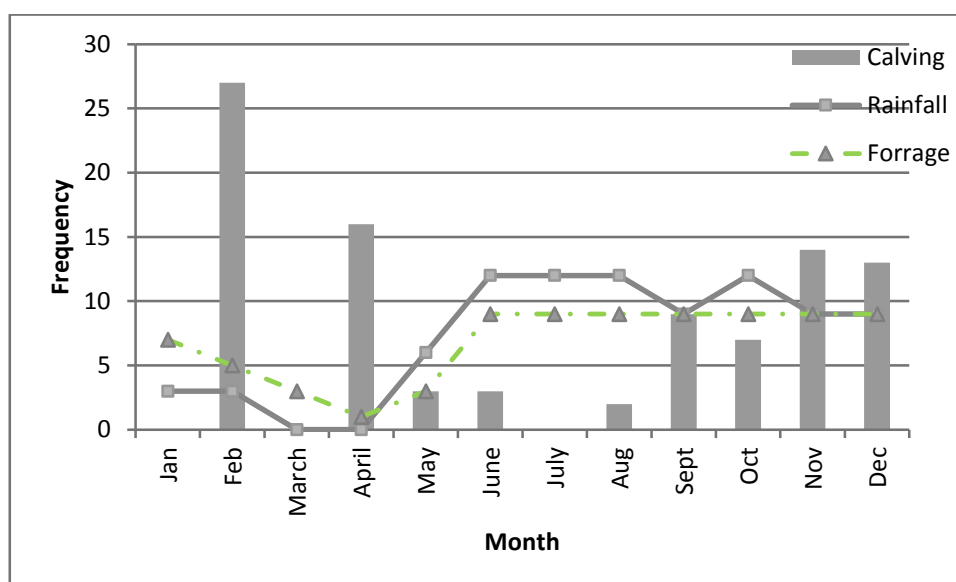


Figure 2. Calving periods relative to rainfall pattern and forage availability adopted by livestock keepers in Matiguas

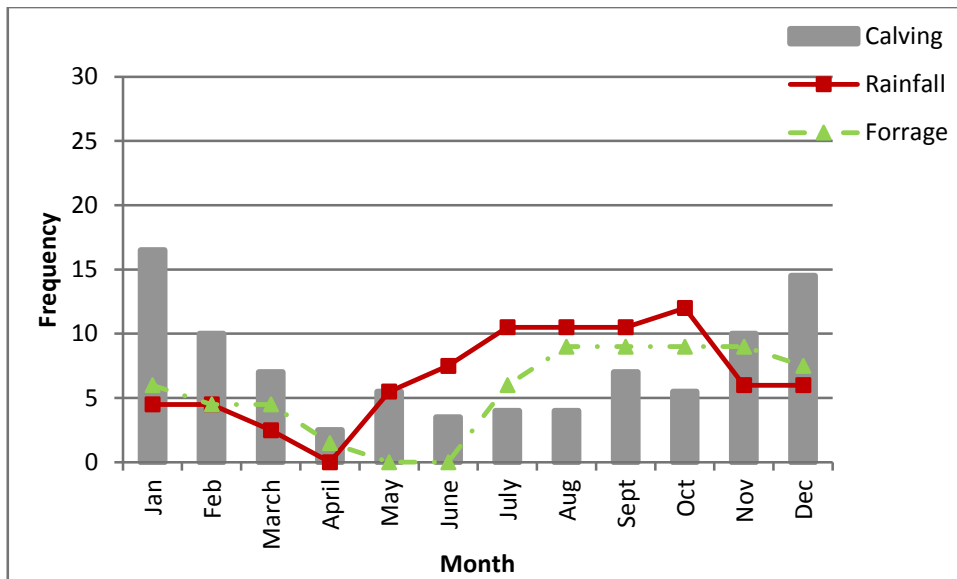


Figure 3. Calving periods relative to rainfall pattern and forrage availability adopted by livestock keepers in Camoapa

The main months for calving were from November to February in Camoapa, and November-December, February and April in Matiguas. The farmers strived to align calving to pasture availability as from January to June forrage availability is a challenge. Farmers in Camoapa noted that prices of milk were lowest from April to August. These months were better for selling animals for beef production. Due to limits in space for rearing young animals, farmers in Camoapa sold weaners aged 10-12 months and weighing 100-120kg to other livestock keepers who would grow and fatten them for slaughter. Larger animals fetch better prices and when sold are sold to middle-men who then sell them for slaughter. The farmers noted that they need training to improve their skills and knowledge in pasture management and conservation in order to enhance the availability of high quality fodders for their animals.

Diseases

The main diseases noted by the farmers were:

1. Mastitis
2. Scours in calves
3. Milk fever
4. Retained afterbirth

Record keeping and types of records kept

Farmers in Camoapa kept some written records on the general productivity of their herds as indicated in Table 3. Very few of the farmers kept records on individual animal performance as most of them indicated that they found the practice time consuming and labour intensive. They however noted that if the practice of record keeping was made easier and there were benefits from keeping records in addition to providing information on how much milk their animals produced, they would begin to practice record keeping.

Table 3. Types of records kept by farmers and the number of farmers indicating that they kept the records

Types of records kept	Number of producers	
	Matiguas	Camoapa
Total milk production of herd		4
Birth dates of calves		8
Treatments for general herd, drugs given, condition being treated		12
Reproduction for individual cows <ul style="list-style-type: none"> • Service dates • Calving 		9
Weight of milk for individual cows		1
Weight of calf at birth and each month until weaning at approx. 15 months of age (calf 120-150 kg)		1
Weight at weaning (15 months)		1

Constraint Summary

A summary of the main constraints to dairy production in order of priority are presented as:

Main constraint identified and the underlying issues	Land	Labour	Capital	Knowledge and information	Other
1. Labour for rearing animals <ul style="list-style-type: none"> - Difficult to get good labour - It is expensive to hire labourers - Quality of work by labourers is often not very good - Farmers do not have the resources to pay for labour 					
2. Costs of production <ul style="list-style-type: none"> - Price of milk is low and inputs, notably labour are expensive - Prices of milk are not stable. In times when production is high (glut), lower prices are offered for milk produced - Price of milk is influenced by price of cheese in El Salvador. Mid-March to Mid-August, there is a glut in the supply of cheese, hence milk prices are low - Taxes are imposed on cooperatives for milk putting at risk the operation of their milk collecting centers - No incentive from cooperatives through guaranteed prices for milk - No investments are made in adoption of new technologies 					
3. Feeding animals <ul style="list-style-type: none"> - Seasonality in forage availability—farmers do not practice forage conservation - Knowledge on forage conservation methods is limited 					
4. Policies are needed to support investment to increase dairy productivity					
5. Diseases indicated earlier					
6. Other challenges <ul style="list-style-type: none"> - Sometimes, notably in the dry season, calf mortality is a little higher than normal - Prices of calves for fattening are very variable as the yearlings are sold through middle-men who set a farm gate price. 					