# WELCOME
# To
# My Presentation

# Recording System of Breeding and Production Performance of Dairy Animals in Bangladesh

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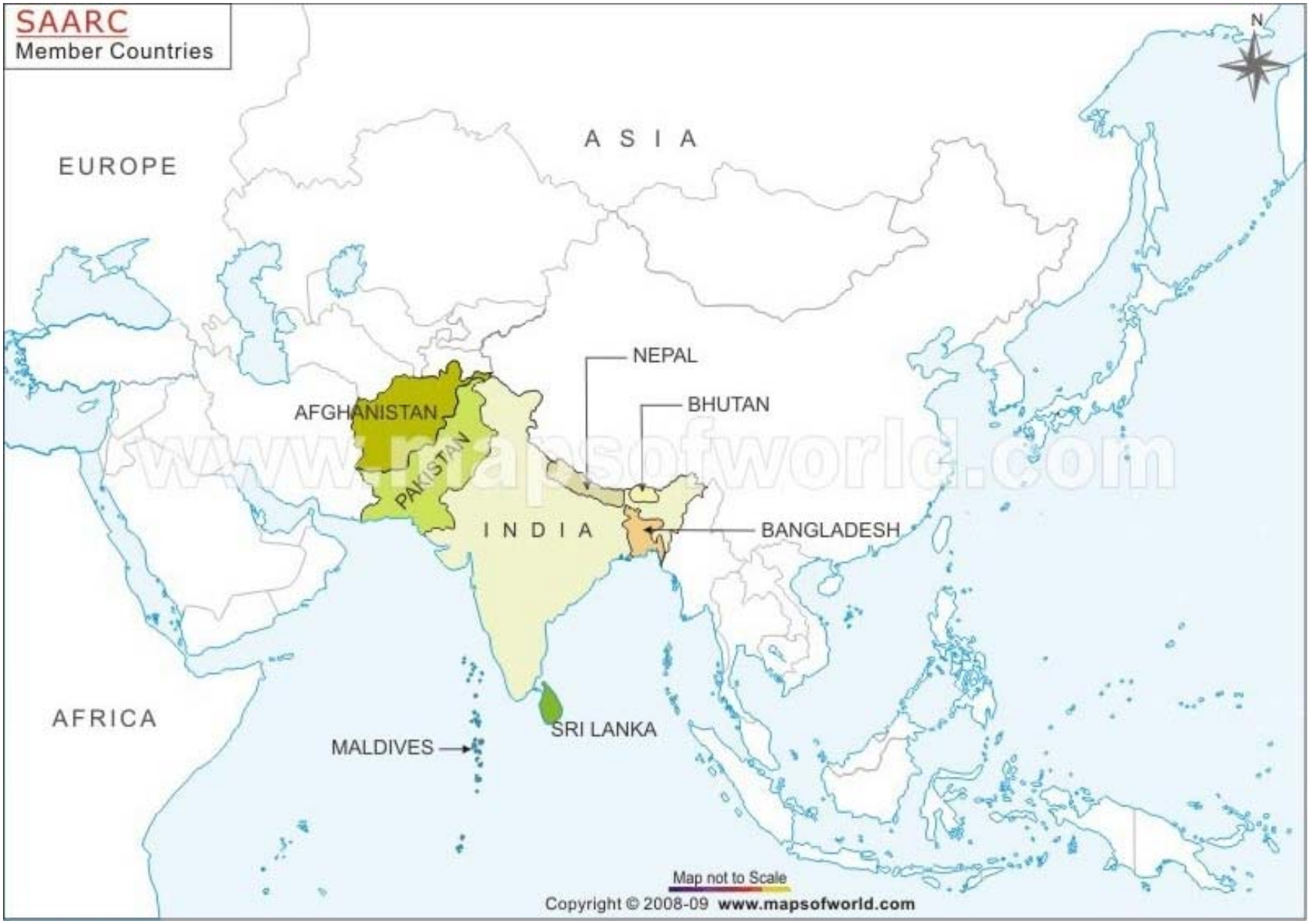
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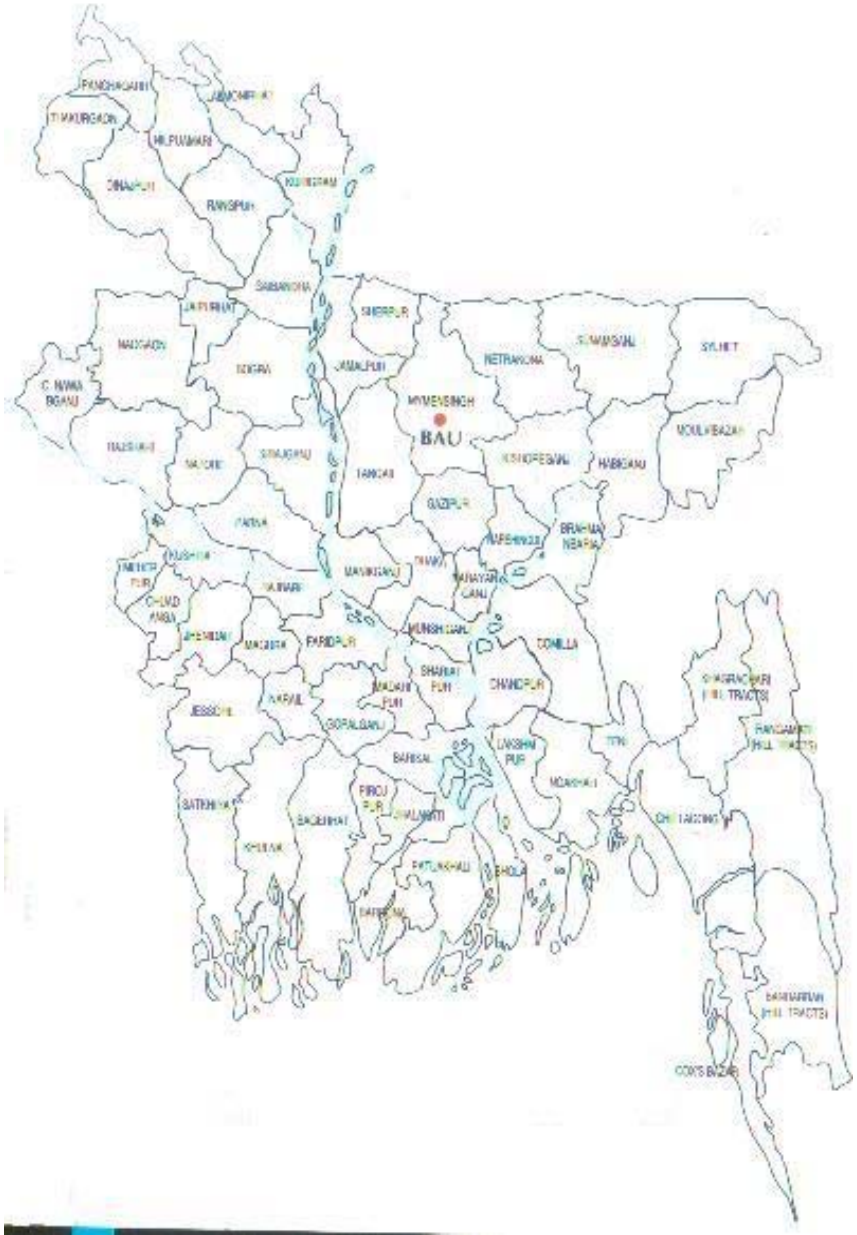
# Map of Bangladesh Showing 64 Districts

# Basic Statistics of Bangladesh

| Parameters | Values |
|---|---|
| Populations | 146 Million |
| Cattle Population | 23.5 Million |
| Buffalo Population | 1.21 Million |
| Per Capita Bovine Animal | 0.18 |
| Indigenous Zebu Cows | 90 % |
| Average Milk Production per Cows | 1.5 kg/day |
| Total Milk Production | 2.95 Million M. T. |
| Total Buffalo Milk Production | 0.022 Million M. T. |
| Milk Requirement per Capita | 250 g/day |
| Milk Available per Capita | 54.6 g/day (22.4 %) |
| Milk Deficit per Capita | 195.4 g/day (78.6 %) |
| Meat Requirement per Capita | 120 g/day |
| Meat Available per Capita | 20.6 (17 %) |
| Meat Deficit per Capita | 99.4 (87 %) |

**Department of Livestock Services (DLS), 2011**

# Introduction

- Major problems of dairy cattle production are – low milk yield, low growth rate, low fertility and calving rate, scarcity of feed, heat stress and diseases
- For the last 25-30 years, many unplanned and sporadic attempts were made to improve milk and meat production through crossbreeding but it failed due to lack of proper recording system which is called the ABC of a breeding program, use of inappropriate breed without testing, limited technical knowledge etc .
- So, Dairy breed development in Bangladesh is still at a rudimentary stage
- It is now our crying need to improve the genetic merit of our indigenous breeds through appropriate breeding program
- Farmers demand: More adapted productive animals including indigenous breeds

# Continued

- In Bangladesh, 90 % of cattle rearers are poor illiterate farmers who are not willing or aware to keep proper record of their animal
- Recording and genetic evaluation system are the nuts and bolts of a breed development program for the dairy industry to be profitable and competitive.
- Considering the above things, two appropriate program has been taken in hand which are

  1. Breeding-up through Progeny Testing and
  2. Open Nucleus Breeding Scheme (ONBS)

# 1. Breeding-up through progeny testing

## Objectives:

(a) Production of superior proven bulls and

(b) Conservation and improvement of native cattle genetic resources

## Main features of Progeny Testing Program in Bangladesh at a Glance

### Phase I

- **Total expenditure**: 94.216 million BDT or 1.17 Million USD
  (1 USD = BDT 80)
- **Duration:** July, 2002 to June, 2007
- **Implementation area**: 22 Districts (out of 64) of Bangladesh having Artificial Insemination Centre
- **Main achievements :** Selection of 5 candidate bulls, 44 progeny show, 2 seminar, 4 workshop , and training of 663 officer, 85 technical personnel and 1100 farmers

# Phase II

- **Total expenditure**: 115.769 million BDT or 1.45 Million USD

  (1 USD = BDT 80)

- **Duration:** July, 2008 to June, 2013
- **Implementation area:** Same as Phase I
- **Main achievements** : Collection of 62 bull calves, selection of 38 candidate bulls, 4 progeny show, 1 seminar, and training of 361 officer, 146 technical personnel and 4025 farmers

# Contribution of the on-going breed-up project

- Main contribution :

  Providing the AI industry of the country with breeding bulls of known superior genetic merit so that the national breed development is ensured at positive direction

- Apparent Contribution:

a) stakeholders know that government has initiated a long-demanded system for selecting the "**Right**" and "**surely good**" breeding bulls for the dairy producers of Bangladesh

b) Good number of skilled manpower

c) Growth in the number of commercial dairy farms through the awareness built by the project organized "**Progeny Shows**".

d) Dissemination of 4,38,012 doses of candidate bull semen in the field whose results will come soon in dairy industry

e) Pronounced demand of the semen of the Project in the field

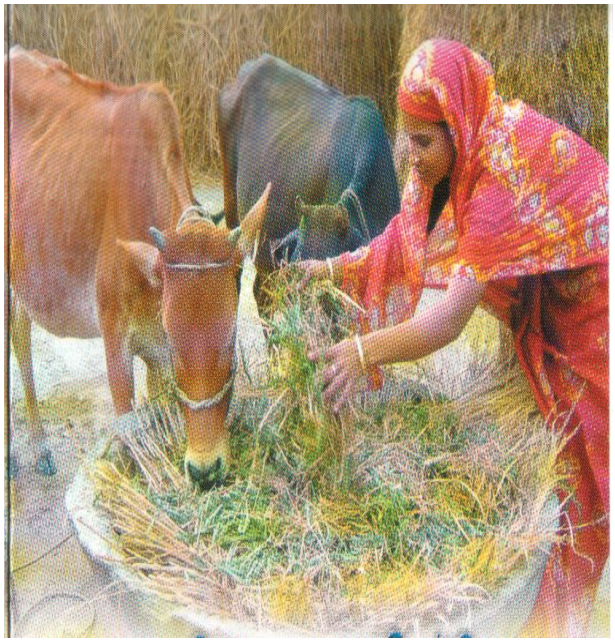
f) A marked positive difference in the dam's average milk yield performance of the candidate bulls compared to AI bulls available in the national AI program has been observed

# Table 1 Brief of Pedigree of some Selected Candidate Bulls

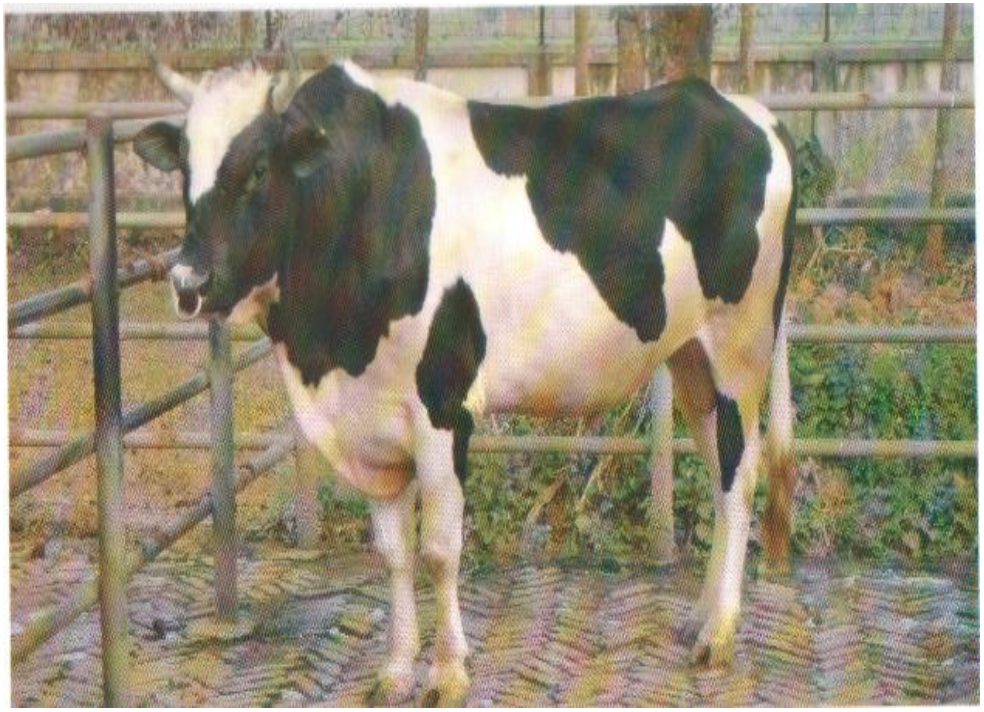
| Sl. No. | Date of Birth | No. and Breed | Name of district | Sire's breed | Dam's breed | Dam's milk production(L) |
|---|---|---|---|---|---|---|
| 1 | 20/04/04 | BDN-26 (LxF) x (LxFxFxF) | Dinajpur | 6087 L*xF**xFx F | LxF | 11 lit./290 D |
| 2 | 07/03/04 | T-06 (L) | Tangail | L | L | 3.5 lit/245 D |
| 3 | 10/07/04 | BDN-22 (SLxF) | Dinajpur | 8269 SLxF | SLxF | 7 lit./298 D |
| 4 | 11/04/04 | D-11 (LxFxF) | Dhaka | F-60 | LxF | 10 lit./289 D |
| 5 | 13/03/04 | PN-39 (LxF) x (LxFxFxF) | Pabna | 6087 LxFxFxF | LxF | 8 lit./295 D |
| 6 | 14/02/06 | TH-104 (LxF) | Thakorgaon | 629 LxF | LxF | 10 lit./1$^{st}$ 100 D |

*L = Local breed (Non-descriptive indigenous cattle)
**F = Pure Holstein-Friesian Cattle Breed

# Fig. Non-descriptive local cows of Bangladesh



# Fig. Non-descriptive local bull of Bangladesh



Candidate bull No.: 14305 (305),

Sire breed and No. : D-165,L×F×F,

Breed of Dam : L×F

Candidate bull No.: 14202 (202),

Sire breed and No. : JR-01,L×F×F,

Breed of Dam : L×F×F

**Candidate bull No.: 14840 (840),**

**Sire breed and No. : GP-3, L×F×F×F,**

**Breed of Dam : L×F×F**

A cow with calf produced by using candidate bull

# Fig. Progeny Show (Calf from Candidate bull)

# 2. Open Nucleus Breeding System in Bangladesh for Dairy Development

- **Objective of this Project**:

  Conservation with concomitant improvement of Red Chittagong Cattle (RCC) – Native Cattle

- **Establishment of Nucleus Herd of RCC (August, 2005)**

- **Table 2** Information of RCC Nucleus Herd at BAU Dairy Farm

| Parameter | Animals Number and source |
|---|---|
| Total size of herd | 53 |
| Male | 3 |
| Female | 50 |
| Sources of animal | Six Upazila of Chittagong district, Bangladesh |
| Breeding at Nucleus Herd | Pure breeding |

# Table 3 Information of RCC Farmer's Society

| Location | Two Upazila of Chittagong district, Bangladesh |
|---|---|
| No. of farmers in each society | 40 |
| Conditions to be a society member | i. Having at least one RCC<br>ii. Willingness to provide information of their animal to Nucleus Herd<br>iii. One selected member will maintain breeding bull<br>iv. Members must obey updated rules and regulation<br>v. Notify before selling of their RCC |

# Animal Recording System as per ICAR

## Animal recording system at BAU Nucleus Herd

i. Identification through Neck Tagging

ii. Pedigree information

iii. Individual performance recording which includes- Date of birth, parity of animal, birth weight, 3 month interval body weight, date of weaning, weaning age, weaning weight, date of puberty, age at first heat, weight at puberty, number of services per conception, age at first calving, post-partum heat period, calving interval, gestation length, lactation length and lactation yield, generation interval, semen volume per ejaculation, pH of semen, sperm concentration of semen, motility of sperm, abnormality of sperm etc.

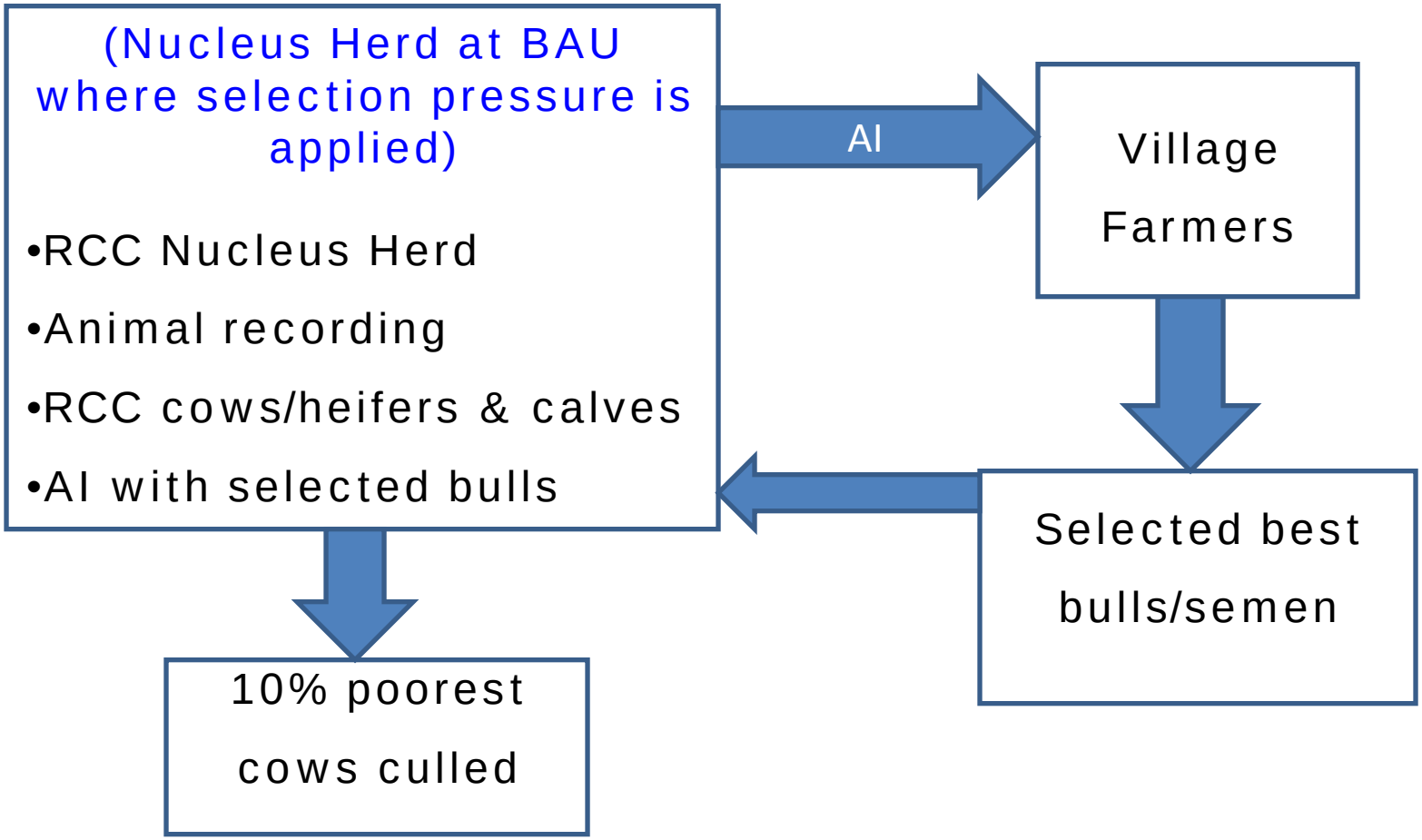



Fig.1 Design of Open Nucleus Breeding System for RCC

Fig. Female and Male of RCC

Fig. Calves of RCC

# Main features of ONBS

- **Specially applicable and promising for developing countries**
- **Detailed recording only in the nucleus herd**
- **Minimum infrastructure required**
- **Minimum field recording**
- **Conservation and simultaneous improvement**
- **Maintain existing farming system**

# Conclusion

- **Dairy sector in Bangladesh needs manifolds growth, for which breed development especially production of proven seed bulls through progeny testing to cater national AI program**
- **Expecting to get 1 or 2 proven bull within next two years**
- **Indigenous Red Chittagong Cattle (RCC) conservation and development through utilization is going smoothly by ONBS**

# Expectation from ICAR -2012 Conference

- **To exchange views & ideas**
- **To know the recording system of different developed & developing countries**
- **To gather new concept of research**
- **Finally, I am eagerly expecting a way out to develop a dairy breed for a developing country like Bangladesh**

# THANKS TO ALL