



**Establishment of Centre of Excellence:  
Banar Bovine Breeding & Research Centre (BBBRC)  
And  
Breed Multiplication Farm**



# **Establishment of CoE - BBBRC (Centre of Excellence - Banas Bovine Breeding & Research Centre)**

- **Hon'ble Minister, MFAH&D, GoI Shri Parshottam Rupalaji suggested to establish a Centre of Excellence (CoE) for breeding and development of indigenous breed of cattle and buffalo.**
- **It is conceptualized to establish a state of the art CoE by Banas Dairy.**
- **It is envisaged that this facility would cater requirement of indigenous germplasm across the country.**



## **Components of CoE - BBBRC**

- **Total area is around 138 acre including 100 acre for fodder production**
- **The centre would have ultra modern animal housing facility to house around 900 animals with followers by 10<sup>th</sup> year of operation.**
- **The embryos produced at the facility would be transferred in the recipients available with the farmers.**
- **3<sup>rd</sup> year onwards, CoE - BBBRC would produce 10000 embryos annually.**



# Financial Outlay – Capital Investment

Particulars	Total Cost (in Rs. Lakh)
Civil Works	14,370.00
Process Equipment (BMC & Automated Milking)	220.00
Service Equipment	4,050.00
Miscellaneous Equipment (Weigh Bridge)	60.00
General Charges	60.00
Technical Service Fee (with GST)	940.00
<b>TOTAL</b>	<b>19,700.00</b>
ICT equipment and requirement	135.5
Farm equipment	408.5
ET lab equipment	336.9
<b>Total</b>	<b>20600.9</b>

- Rs. 3882.9 lakh has been sanctioned under RGM scheme including Rs. 200 lakh for donor procurement



## DETAILS OF CIVIL WORKS

Description	Estimated Amount (Rs Lakh)
Fodder Farm Infrastructures	
Fodder farm Boundary Fencing (RCC Post and Wire-Fence for 5.5 KM)	302.50
Other Infrastructures	431.07
Animal Sheds and Allied infrastructures of Main Farm	
Animal Sheds	2,709.26
Other Veterinary Infrastructures including IVF Lab & Feed sheds	1,524.97
Civil Structures for Electrical Installations	140.88
Civil Structures for Workers related Infrastructures including Parking, Canteen, Row Houses, etc.	826.77
Residences	514.42
Roads & Water Tanks	1,302.50
Dung disposal, management & Bio Gas Civil Construction	1,669.55
Compound Wall (3 KM assumed)	636.00
Other Ancillary Works (Water supply, Sanitary, Storm water drainage, etc.)	1,252.70
Pre Construction Works	311.00
Landscaping	150.00
Internal Electrification, LAN, EPABX, Light Fixtures	687.90
Building & Laboratory Furniture	310.00
Contingency, Land Development, Consultant Services, Provision for Price Adjustment & Escalation	1,600.00
<b>Total Civil Works</b>	<b>14,370.00</b>



## Details of Service Equipment

Description	Estimated Amount (Rs Lakh)
Solar PV & Solar Thermal	775.00
HVAC, AC & Shed Cooling	1,340.00
Industrial Electricals HT	350.00
Water Handling, Refrigeration & Contingencies	85.00
Bio Gas including Power Generation (50 MT dung)	1,500.00
Total Service Equipment	4,050.00



## **Arrangement to establish the CoE – BBBRC**

- **NDDDB and Banas Dairy would enter in to a consultancy agreement for execution of the project – Fee at 4.25 % of the project cost of the civil project cost.**
- **Project will be completed within 20 months from the date of signing of agreement.**
- **Procurement of equipment (Laboratory, ICT and Farm) and animals would be done by Banas dairy with technical support from NDDDB**
- **NDDDB would provide technical assistance for operationalization of the facility and has already trained 7 officers of Banas Dairy on OPU-IVEP-ET**



## Establishment of BMF (Breed Multiplication Farm)

A separate project for establishment of BMF has been sanctioned to Banas Dairy under RGM with a Total outlay of Rs. 435 lakh - grant amount Rs. 200 lakh

Particulars	Total Cost (in Rs. Lakh)
<b>Capital investment</b>	
Civil works	200.0
Farm equipment	35.0
Animal Purchase	200.0
<b>Total</b>	<b>435.0</b>

- **NDDB and Banas Dairy would enter in to a consultancy agreement for execution of the project on pro bono basis. Project will be completed within 10 months from the date of signing of agreement.**





# **Establishment of sex sorted facility at Banas Dairy**

- **The development of sex sorted machines is at advance stage.**
- **NDDB is in the process of devising the methodology of either supplying semen or deployment of machines, which will be finalised by end of February 2024.**



# Import of Kankrej Germplasm from Brazil

- **NDDB has placed Purchase order for import of frozen semen doses of Gir breed from Brazil. After completion of import of FSDs, NDDB will coordinate with DAHD for:**
  - 1. Finalizing revised bilateral sanitary certificate for import of semen and embryos from Brazil**
  - 2. Reappropriation of budget for import of 240 Kankrej embryos from Brazil in place of Red Sindhi under RGM**



# Establishment of NDDDB National Reference Laboratory for Animal Health and Genetics



# **National Reference Laboratory for Animal Health and Genetics**

## **Aim:**

**State-of the art reference facility for addressing animal health and genetics aspects of animal husbandry and One Health imperatives**

## **Objectives:**

- **Comprehensive Diagnostic Services**
- **Disease Surveillance and Monitoring**
- **Disease control: Development of emergency preparedness, rapid response & deployment**
- **Provision of genetic sequencing, genotyping and genetic fingerprinting**
- **Research and Innovation in disease diagnosis, animal genetics, quality control**
- **Repository of reference materials**
- **Provision of training and Technical Assistance**



# Scope and Activities of National Reference Laboratory

Pathogen identification: Using cutting-edge tools, techniques and systems in microbiology and molecular biology

Disease surveillance & monitoring: Using serological assays (ELISA, rapid tests).

Genotyping and Genetic Fingerprinting: PCR & dPCRs, Microsatellite Analysis (STRs), SNP Genotyping, NGS, Capillary Electrophoresis, dPCR, CRISPR-Cas9 Technology, epigenetics (gene regulation and disease)

High-Throughput DNA Sequencing & Genome database: NGS, Bioinformatics support; Data storage

Haematology, Histopathology and Cytology

Parasitological investigations

Innovation: Development, testing and validation of diagnostics based on novel technologies viz., biosensors, nanotechnology, IoT and AI



# Advantages

Expertise and capacity for prompt diagnosis of any bovine disease occurring in Gujarat or anywhere in the country.

A one of its kind working model of the One Health concept with linkages with veterinary and medical institute.

Hub for training and research in diagnostics for veterinarians, physicians, students, scholars etc.

Surveillance centre for antimicrobial resistance (AMR) in the dairying sector for the region and across the country.

R&D and innovation centre for development of cost-effective diagnostic techniques.

World Organisation for Animal Health (WOAH) recognized reference laboratory.



# Laboratory and essential non-lab space

S. No.	Dedicated Rooms for essential non-laboratory functions
1	Sample Collection/ Receipt Room
2	Sterilization room
3	Decontamination room
4	Material Service section
5	Walk-in Cold room; +4 deg
6	Walk-in Cold room; -20 deg
7	LN2 holding & storage
8	Repository room
9	Store
10	Quality assurance
11	Reception, Office, Pantry
12	Meeting rooms & Conference Hall

Sr. No.	Dedicated Section-wise Laboratory Rooms
1	Basic/ General Virology laboratory (with ante-room)
2	Virology laboratory (with BSL3 Provisions)
3	Basic/ General Microbiology laboratory (with ante-room)
4	Microbiology laboratory
5	Histopathology Laboratory
6	Parasitology
7	Molecular Biology Laboratory (with 3 rooms)
8	Cell culture (with ante-room)
9	BSL-3 laboratory



# Estimate for NDDDB National Reference Laboratory in Banaskantha Rs. in Lakh)

SN	Description	Estimate (NON-BSL) (INR)	Estimate (BSL3) (INR)
A	CIVIL WORKS	1581.58	530.44
B	HVAC, MODULAR PARTITIONS AND LAB FURNITURE	366.00	673.00
C	SERVICES/UTILITIES	493.00	247.00
D	EQUIPMENTS (Penetration, Decontamination for BSL3 etc.)	0.00	260.00
E	LAB EQUIPMENT	1608.85	200.00
F	GENERAL CHARGES (PCB, Fire Authority, Electricity, Advertisement, Misc.)	60.00	20.00
G	CONTINGENCY (5%)	205.50	96.52
		4314.93	2026.96
	GRAND TOTAL		6,341.88
		SAY 63.5 Cr.	





**THANK YOU**