



RFD
Result Framework Document

For

National Research Centre on Mithun
(ICAR)

Jharnapani, Medziphema,

Nagaland, India

(2011-2012)

National Research Centre on Mithun (ICAR)
Jharnapani, Medziphema, Nagaland, India

Result Framework Document (RFD)

Section 1: Vision, Mission, Objectives and Functions

Vision

- Profitable and productive Mithun based livestock production system for North Eastern hilly tribes

Mission

- To develop and facilitate dissemination of technologies relevant to efficient and profitable production of quality meat, milk and other products for improving the economic status of poor Mithun rearers of North Eastern region of our country.

Objectives

- Conservation and improvement of Mithun germplasm resources of the country
- Development of Mithun production, health, management and product processing technologies
- Assessment of contribution of Mithun to the resource poor farmers under hill and mountain ecosystem
- Development of cross boundary linkages for technology exchange and propagation

Function

- Identification, Evaluation and Characterization of Mithun germplasm available in the country.
- Conservation and improvement of Mithun for meat and milk
- To act as a repository of germplasm and information centre on Mithun

Section 2: Inter se priorities among key objectives, success indicators and targets.

Objective	Weight	Actions	Success Indicator	Unit	Weight	Target/Criteria value				
						Excellent	Very Good	Good	Fair	Poor
						100%	90%	80%	70%	60%
1. Phenotypic and genetic characterization of Mithun	15	1. Cytogenetic data analysis of Mithun and karyotyping of related bovine species.	Animals to be analyzed cytogenetically	Number	5	80	70	60	50	40
		2. Study of dentition patterns and validation	Animals to be recorded.	Number	5	50	45	40	35	30
		3. Developing prediction formula for body weight estimation	Animals to be recorded.	Number	5	50	45	40	35	30
2. Genetic characterization of kappa casein and leptin gene of Mithun	10	1. PCR amplification of exonic regions	No. of PCR primers to be used	Number	5	3	2	1	0	0
		2. Polymorphism Study of kappa casein and leptin gene	Screening of animals for polymorphism	Number	5	75	60	50	40	30
3. Enhancing reproductive and productive efficiency of Mithun	50	1. Standardization of superovulation and embryo transfer	Animals to superovulate and embryo recovery and transfer	Number	5	8	7	6	5	4
		2. Identification of fertility associated antigen in Mithun semen	Identification of antigen through PCR	Number	10	2	1	0	0	0
		3. Follicular dynamics study to understand follicular development	Cyclic study of follicles	Number	5	3	2	1	0	0
		4. Expression study of genes regulating muscle growth	Identification of genes	Number	5	8	7	5	4	3
		5. Evaluation of feed blocks in terms of nutrient	Types of feed block	Number	10	5	4	3	2	1

		utilization								
		6. Isolation and characterization of rumen microbes	No. of microbes isolated and characterized	Number	10	5	4	3	2	1
		7. Validation of developed feeding standard of growing Mithuns	No. of different combination of diets used	Number	5	5	4	3	2	1
4.Improving the health status of Mithun	15	1. Evaluation of efficacy of chemotherapeutic and herbal drugs against GI helminths	No. of drugs to be tested	Number	5	5	4	3	2	1
		2. Survey for prevalence of common disease condtion	No. of animals to survey	Number	5	400	300	250	200	100
		3. Organization of animal health cum vaccination camp	No. of camps to organize	Number	5	5	4	3	2	1
5. Socio-economic study and Transfer of technology through extension activities	8	1. Survey of Mithun rearing villages	No. of villages to be surveyed	Number	4	4	3	2	1	0
		2. Distribution of mineral mixture and creating awareness about AI among Mithun rearers	Organizing health camps and formal & informal discussion	Number	4	5	4	3	2	1
6.Efficient functioning of RFD system	2	Timely submission of RFD document	Timely submission	Date	2	31/3/11	1/4/11	2/4/11	3/4/11	4/4/11

Section 03: Trend values of the success indicators

Objective	Actions	Success Indicators	Unit	Actual Value for FY 08/09	Actual Value for FY 09/10	Actual Value for FY 10/11	Target Value for FY 11/12	Projected Value for FY 12/13
1. Phenotypic and genetic characterization of Mithun	1. Cytogenetic data analysis of Mithun and karyotyping of related bovine species.	Animals to be analyzed cytogenetically	Number	-	--	10	80	-
	2. Study of dentition patterns	Animals to be recorded.	Number	-	--	10	50	-
	3. Developing prediction formula for body weight estimation.	Animals to be recorded.	Number	-		10	50	
2. Genetic characterization of kappa casein and leptin gene of Mithun	1. PCR amplification of exonic regions.	No. of exonic regions to amplify	Number	-	2	2	1	-
	2. Polymorphism Study of kappa casein and leptin genes.	Screening of animals for polymorphism	Number	-	5	59	70	-
3. Enhancing reproductive and productive efficiency of Mithun	1. Standardization of superovulation and embryo transfer	Animals to superovulate and embryo recovery and transfer	Number	-	5	5	8	5
	2. Identification of fertility associated antigen in Mithun semen	Identification of antigen through PCR	Number	-	-	-	2	-
	3. Follicular dynamics study to understand follicular development	Cyclic study of follicles	Number	-	-	-	3	3

	4. Expression study of genes regulating muscle growth	Identification of genes	Number	-	-	-	8	3
	5. Development/Evaluation of feed blocks in terms of nutrient utilization	Types of feed block	Number	-	-	-	5	5
	6. Isolation and characterization of rumen microbes	No. of microbes isolated and characterized	Number	-	-	-	5	5
	7. Validation of developed feeding standard of growing Mithuns	No. of different combination of diets used	Number	-	-	-	5	5
4.Improving the health status of Mithun	1. Evaluation of efficacy of chemotherapeutic and herbal drugs against GI helminths	No. of drugs to be tested	Number	-	-	4	4	3
	2. Survey for prevalence of common disease condtion	No. of animals to survey	Number	-	-	150	400	400
	3. Organization of animal health cum vaccination camp	No. of camps to organize	Number	-	-	3	5	5
5. Socio-economic study and Transfer of technology through extension activities	1. Survey of Mithun rearing villages	No. of villages to be surveyed	Number	-	-	2	4	-
	2. Distribution of mineral mixture and creating awareness about AI among Mithun rearers	Organizing health camps and formal & informal discussion	Number	-	-	3	5	5
6.Efficient functioning of RFD system	1. Timely submission of drafts for approval	Timely submission	Date	-	-	16/3/11	31/3/11	31/3/12

Section 4: Description and definition of success indicators and proposed measurement methodology.

- Phenotypic and genetic characterization of Mithun
 - This objective is important to establish phenotypic and genetic differences between different strains of Mithun.
 - It will also be very useful to predict age from the dentition patterns of Mithun as well as to develop prediction equation for weight from the body measurements under field condition where there is no record keeping system available
- Genetic characterization of kappa casein and leptin gene of Mithun
 - Characterization of Kappa casein gene of Mithun is important to select animals having desired casein genotypes for improving quality of milk.
 - As Mithuns are used mostly as meat animals, characterization of leptin gene of Mithun will be useful to select animals with better growth rate, more body weight and higher feed conversion efficiency.
- Enhancing reproductive and productive efficiency of Mithun
 - Enhancement of reproductive efficiency of Mithun through superovulation will be helpful for multiplication of valuable germplasm and conservation of Mithun.
 - Identification of fertility associated antigen in Mithun semen will be helpful to identify the bulls with better fertility rate.
 - Follicular dynamics study to understand follicular development in Mithun will help to identify the reproductive status of animals for future programme.
 - Expression study of genes regulating muscle growth will be helpful to identify the genes responsible for higher body weight in Mithun.
 - This is a very important area of work to develop nutritionally rich low-cost feed block for Mithun using locally available feed resources and to reduce cost of production under farm condition.
 - Not much information is available on the chemical and bioactive properties of Mithun milk. This study would be helpful to understand the functional attributes of Mithun milk.
 - Evaluation of feed blocks in terms of nutrient utilization – This will help to determine the nutritive value of developed feed blocks in Mithuns in terms of nutrient utilization.
 - Isolation and characterization of rumen microbes – This action will help in identifying different rumen microbes which are having capacity to degrade tannins and fibre in different types of tannin and fibre-rich diets of Mithun.
 - Validation of developed feeding standard of growing Mithuns – This action will be useful for feeding growing Mithuns for their optimum growth based on feeding standard developed in the Institute.
- Improving the health status of Mithun
 - Different drugs will be tested in different doses for their efficacy against various GI helminths. It will be useful in preparing the deworming schedule and calendar for the control of GI helminths.
 - Survey will be made in randomly selected villages across the Nagaland state and samples will be collected for the investigation of the prevalence and incidence of

common diseases in farm and field condition. It will be useful in preparing the disease map of the state for Mithuns.

- Animal Health cum Vaccination camp will be organized in randomly selected village for control of parasites and Foot and Mouth disease.
- Socio-economic study of Mithun farmers will be helpful to find out information regarding how to develop socio-economic status of Mithun farmers as well as to collect information regarding preservation and storage of Mithun products. On the other hand, transfer of technology through extension activities will be important for identification of risk factors and barriers for successful transfer of technology developed by the Institute and strategies for addressing them.
- Efficient functioning of RFD system – This is a mandatory objective under RFD system and has been submitted in time on or before 5.00 pm on 31.03.2011.

Section 5: Specific performance requirements from other departments that are critical for delivering agreed results.

- State Animal Husbandry Department in adoption of technology transfer
- Availability of funds from ICAR HQ.
- Availability of adequate number of animals under field conditions.