



Results-Framework Document (RFD)

for

National Institute of Animal Nutrition and Physiology

(2014-2015)

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Section 1 : Vision, Mission, Objectives and Functions

Vision

Productivity enhancement for profitable and sustainable livestock production

Mission

Improving production and reproductive efficiency in livestock through basic physiological and nutritional approaches

Objectives

1. Improving nutrient assimilation and physiological functions for enhancing livestock production and feed quality and safety assessment
2. Feeding and management strategies for reducing climate change impact on livestock
3. Human resource development

Functions

1. Conduct basic and fundamental research to address physiological and nutritional problems related to biophysical translation of nutrients for productive functions in livestock
2. Developing quality human resource in frontier areas of animal nutrition and physiology
3. Research translation to connect discovery with applications

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

Sl. No.	Objective (s)	Weight	Action (s)	Success Indicator(s)	Unit	Weight	Target /Criteria Value				
							Excellent	V. Good	Good	Fair	Poor
							100%	90%	80%	70%	60%
1.	Improving nutrient assimilation and physiological functions for enhancing livestock production and feed quality and safety assessment	50	Identification of factors / bio-molecules/tools influencing production and reproduction in livestock	Factors / bio-molecules/tools identified	Number	15	5	4	3	2	1
			Development of repository of anaerobic rumen microbes for better feed utilization	Anaerobic rumen microbes catalogued	Number	15	30	25	20	15	10
			Identification of microbes/microbial enzymes/rumen metabolic pathways for feed/fibre utilization	Microbes/microbial enzymes/rumen metabolic pathways for feed/fibre utilization identified	Number	10	5	4	3	2	1
			Screening of samples for quality and safety standards (heavy metals/pesticide residues/toxins)	Samples analyzed for heavy metals/pesticide residues/toxins	Number	10	54	45	36	27	18

2.	Feeding and management strategies for reducing climate change impact on livestock	20	Developing models for assessing climate change impact on feed resources in different states	States covered	Number	10	7	6	5	4	3
			Developing tools/techniques for ameliorating abiotic stress	Tools/techniques developed	Number	10	5	4	3	2	1
3.	Human resource development	10	Capacity building and skill development	Trainings / workshops conducted	Number	10	8	7	6	5	4
	Publication /Documentation	5	Publication of research articles in the journals having the NAAS rating of 6.0 and above	Research articles published	Number	3	24	20	16	12	8
			Timely publication of the Institute Annual Report (2013-2014)	Annual Report published	Date	2	Jun 30, 2014	July 02, 2014	July 04, 2014	July 07, 2014	July 09, 2014
	Fiscal resource management	2	Utilization of released plan fund	Plan fund utilized	%	2	98	96	94	92	90
	Efficient functioning of the RFD system	3	Timely submission of Draft RFD for 2014-2015 for Approval	On-time submission	Date	2	May 15, 2014	May 16, 2014	May 19, 2014	May 20, 2014	May 21, 2014
Timely submission of Results for 2013-2014			On-time submission	Date	1	May 1, 2014	May 2, 2014	May 5, 2014	May 6, 2014	May 7, 2014	

Enhanced Transparency /Improved Service delivery of Ministry/ Department	3	Rating from Independent Audit of implementation of Citizen's/Client's Charter (CCC)	Degree of implementation of commitments in CCC	%	2	100	95	90	85	80
		Independent audit of implementation of Grievance Redress Management (GRM) system	Degree of success in implementing GRM	%	1	100	95	90	85	80
Administrative Reforms	7	Update organizational strategy to align with revised priorities	Date	Date	2	Nov1, 2014	Nov 2, 2014	Nov 3, 2014	Nov 4, 2014	Nov 5, 2014
		Implementation of agreed milestones of approved mitigating strategies for reduction of potential risk of corruption (MSC)	% of implementation	%	1	100	90	80	70	60
		Implementation of agreed milestones for ISO 9001	% of implementation	%	2	100	95	90	85	80
		Implementation of milestones of approved Innovation Action Plans (IAPs)	% of implementation	%	2	100	90	80	70	60

Section 3 :Trend Values of the Success Indicators

Sl. No.	Objective(s)	Action(s)	Success indicator(s)	Unit	Actual Value for FY 12-13	Actual Value for FY 13-14	Target Value for FY 14-15	Projected Value for FY 15-16	Projected Value for FY 16-17
1.	Improving nutrient assimilation and physiological functions for enhancing livestock production and feed quality and safety assessment	Identification of factors / bio-molecules/tools influencing production and reproduction in livestock	Factors / bio-molecules/tools identified	Number	-	4	4	4	4
		Development of repository of anaerobic rumen microbes for better feed utilization	Anaerobic rumen microbes catalogued	Number	-	22	25	30	NA
		Identification of microbes/microbial enzymes/rumen metabolic pathways for feed/fibre utilization	Microbes/microbial enzymes /rumen metabolic pathways for feed/fibre utilization identified	Number	-	-	4	5	5
		Screening of samples for quality and safety standards (heavy metals/pesticide residues/toxins)	Samples analyzed for heavy metals/ pesticide residues/toxins	Number	-	-	45	50	54

2.	Feeding and management strategies for reducing climate change impact on livestock	Developing models for assessing climate change impact on feed resources in different states	States covered	Number	4	5	6	NA	NA
		Developing tools/techniques for ameliorating abiotic stress	Tools/techniques developed	Number	-	-	4	4	4
3.	Human resource development	Capacity building and skill development	Trainings / workshops conducted	Number	7	7	7	7	7
	Publication /Documentation	Publication of research articles in the journals having the NAAS rating of 6.0 and above	Research articles published	Number	20	22	20	20	20
		Timely publication of the Institute Annual Report (2013-2014)	Annual Report published	Date	-	-	02.07.14	-	-
	Fiscal resource management	Utilization of released plan fund	Plan fund utilized	%	99.99	92.59	96	-	-
	Efficient functioning of the RFD system	Timely submission of Draft RFD for 2014-2015 for Approval	On-time submission	Date	-	-	May 16, 2014	-	-
		Timely submission of Results for 2013-2014	On-time submission	Date	-	-	May 2, 2014	-	-

	Enhanced Transparency /Improved Service delivery of Ministry/ Department	Rating from Independent Audit of implementation of Citizen's/Client's Charter (CCC)	Degree of implementation of commitments in CCC	%	-	-	95	-	-
		Independent audit of implementation of Grievance Redress Management (GRM) system	Degree of success in implementing GRM	%	-	-	95	-	-
	Administrative Reforms	Update organizational strategy to align with revised priorities	Date	Date	-	-	Nov 2, 2014	-	-
		Implementation of agreed milestones of approved mitigating strategies for reduction of potential risk of corruption (MSC)	% of implementation	%	-	-	90	-	-
		Implementation of agreed milestones for ISO 9001	% of implementation	%	-	-	95	-	-
		Implementation of milestones of approved Innovation Action Plans (IAPs)	% of implementation	%	-	-	90	-	-

Section 4 (a) : Acronyms

S. No.	Acronym	Description
1	ASMM	Area Specific Mineral Mixture
2	DAHDF	Department of Animal Husbandry, Dairying & Fisheries
3	GoI	Government of India
4	SAUs	State Agricultural Universities

Section 4 (b) : Description and definition of success indicators and proposed measurement methodology

Sl. No	Success Indicator	Description	Definition	Measurement	General Comments
1.	Factors / bio-molecules/tools identified	Acute shortage of quality inputs is affecting production and reproduction in livestock and poultry. There is a need to understand basic mechanism of the nutrient uptake and different physiological functions so as to optimize production and reproduction by identifying suitable biochemical/molecular markers. Majority of factors or biomolecules that influence nutrient bioavailability and utilization, production and reproductive process need to be further explored in livestock	The major problem of low productivity and reproductive efficiency in the livestock needs to be addressed by understanding the mechanism of nutrient bioavailability and utilization through identifying biochemical markers responsible for various physiological functions	Number	Understanding the mechanism and the factors/biomolecules that influences production and reproduction will help in designing strategies for optimum feeding and management practices in livestock so as to maximize animal production

2.	Anaerobic rumen microbes catalogued	There is a need to identify and characterize rumen microbes which can breakdown the lignocellulosic biomass and to maintain a repository of potential fibre degrading microbes. The country is bestowed with a diverse group of region-specific breeds of ruminants and so are their rumen microbes. Each breed has a unique set of rumen microbes with diverse capability of fibre digestion. Majority of these rumen microbes remains uncharacterized and uncatalogued	Low digestibility of poor quality crop residues is a major concern in providing quality feed. This needs to be addressed through understanding the rumen microbial diversity so as to modulate for enhanced fibre utilization	Number	There is acute shortage of feed and fodder in the country and animals have to be fed on poor quality crop residues. To enhance the utilization of crop residues we need to understand the rumen ecosystem and have repository of some of the best fibre digesting microbes for their future use and application
3.	Microbes/microbial enzymes/rumen metabolic pathways for feed/fibre utilization identified	Identification of microbes/microbial enzymes and deciphering metabolic pathways would help in developing strategic approaches for better fibre digestion in ruminants.	As only about 10% of the rumen microbes are culturable, there is a need to understand the total microbial diversity in the rumen by studying the microbes/ microbial enzymes/rumen metabolic pathways responsible for feed/fibre utilization.	Number	Currently, only 10% of the rumen microbes are known based on traditional culture technique. The entire profile of microbes/ microbial enzymes /rumen metabolic pathways responsible for feed/fibre utilization will be characterized through metagenomic approach
4.	Samples analyzed for heavy metals/pesticide residues/toxins	Environmental pollutants and contaminants like heavy metals/pesticide residues/toxins are found in the food-feed chain affecting animal and human health and also global trade.	Assessment of levels of the contaminants/pollutants in the food-feed chain would help in developing a data base for providing cost effective ameliorative strategies to improve feed and product quality.	Number	There is need to develop a quality data base on the level of environmental pollutants and contaminants in feeds/fodder/animal products to improve feed and fodder quality and safety for producing safe animal products.

5.	States covered	Assessing the impact of climate change on availability of feed resources in different regions is essential to develop strategies for addressing feed/ fodder shortage	Climate change can strongly affect the availability of feed resources in different regions of the country. Hence, there is a need to develop models to assess the availability of feeds which in turn will help in taking strategic measures to address the problem of feed deficiency	Number	Climate change is likely to affect the crop production and their biomass yield and in order to be in readiness to know the level of impact, modeling study to assess the feed availability is important
6.	Tools/techniques developed	In order to assess the impact of climate change on livestock productivity there is need to develop suitable mitigation and adaptive tools/techniques.	To mitigate the impact of climate change on animal production and reproduction appropriate tools/techniques are required.	Number	Climate change is likely to impact animal production and reproduction and in order to reduce the stress appropriate mitigation and adaptive tools are necessary.
7.	Trainings / workshops conducted	To develop quality human resource and providing skill development to various stakeholders, the training program in various facets of animal nutrition and physiology is required.	Due to significant growth of animal husbandry sector in the country, there is increased demand of trained human resources. To maintain this demand, development of quality human resource is important which could be achieved by providing training and skill in frontier areas of animal nutrition and physiology for overall growth of animal productivity	Number	As feeding and management of animals accounts for about 60-70% of the total cost of livestock production, providing training and skill development will help the various stake holders including farmers to adopt to recent techniques for improving the production and get better economic returns

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

Location Type	State	Organization Type	Organization Name	Relevant Success Indicator	What is your requirement from this organization	Justification for this requirement	Please quantify your requirement	What happens if your requirement is not met
Central/ State	All states of India	National Institutes/State Agricultural Universities	National Institutes/State Agricultural Universities	Anaerobic rumen microbes catalogued	Collaboration for timely submission of rumen bacteria	Since there is a large diversity of livestock population maintained on different feeding systems, there is a possibility of existence of elite fibre digesting bacteria in the population and hence there will be opportunity for replacing the poor fibre degrading bacteria with elite fibre degrading bacteria	50%	There will be some reduction in the target value to be met
Central/ State	All states of India	SAUs / DAHDF, GoI / Directorate of Extension /SAUs	SAUs / DAHDF, GoI / Directorate of Extension/ SAUs	Trainings/ workshops conducted	Nomination of trainees from their parent departments	Since the feeding and management varies across the country, it is necessary to train all the stake holders. Modern day animal husbandry requires periodic up gradation of skill and knowledge of farmers and other stakeholders. Hence training is required	50%	Reduction in the number of trainees will not be economically feasible as minimum number of trainees is required under each training programme

Section 6 : Outcome/impact of activities of Department/Ministry

S. No.	Outcome/Impact	Jointly responsible for influencing this outcome/impact with the following departments/ ministry (ies)	Success indicator (s)	Unit	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
1	Improved productive /reproductive efficiency of livestock	Livestock farmers, state agricultural universities, milk federations / feed industries	Animals displayed estrous/ conceived by supplementing area specific mineral mixture (ASMM)	Percentage	35	40	45	50	55
			Increase in egg production by using red spectrum light	Percentage	2.0	2.25	2.5	3.0	3.0
			Reduction in the cost of feeding of dry fodder by replacing paddy straw with areca sheath	Percentage	35	40	45	50	50
2	Development of quality human resources	State Agricultural Universities, /Animal Husbandry departments	Persons trained	Number	150	200	200	200	200