



# **Results Framework Document (RFD) for**

## **Project Directorate on Foot and Mouth Disease (2014-2015)**

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## **Section 1: Vision, Mission, Objectives and Functions**

### **Vision:**

To make India free from Foot and Mouth Disease (FMD).

### **Mission:**

Active epidemiological surveillance through regularly monitoring antigenicity and genomic make up of Foot and Mouth Disease (FMD) virus strains responsible for disease outbreaks, to provide training in diagnosis and epidemiology, and to develop technologies for making country free from FMD.

### **Objectives:**

1. To conduct systematic epidemiological studies on Foot and Mouth Disease
2. Production, standardization and supply of diagnostic reagents for Foot and Mouth Disease virus serotyping, serosurveillance and seromonitoring.

### **Functions:**

1. To carryout antigenic and molecular characterization of field isolates.
2. To study molecular epidemiology of FMD in India.
3. To carryout vaccine matching exercise for monitoring of appropriateness of in-use vaccine strains.
4. Maintenance of National Repository of FMD virus strains.
5. Production, standardization and supply of diagnostic kits for FMD virus diagnosis (sandwich ELISA and mPCR kit), sero-monitoring (LPB-ELISA) and serosurveillance (NSP-DIVA ELISA)
6. To develop and standardize advanced laboratory techniques in compliance with the International standards
7. Participation in FMD Control Programme
8. National FMD Serosurveillance

## Section 2: *Inter se* priorities among Key Objectives, Success Indicators and Targets

S.No.	Objectives	Weight	Actions	Success Indicators	Unit	Weight	Target/ Criteria Value				
							Excellent	Very Good	Good	Fair	Poor
							100%	90%	80%	70%	60%
1.	<b>To conduct systematic epidemiological studies on Foot and Mouth Disease</b>	60	Molecular diagnosis and epidemiology of FMD	Serotype differentiation by multiplex PCR and ELISA	Number	8	720	600	480	360	240
				Comparison of nucleotide sequence of FMD virus isolates	Kb	9	144	120	96	72	48
				Antigenic characterization of outbreak strains	Number	9	54	45	36	27	18
			Seromonitoring and serosurveillance against FMD virus	Animals tested for antibody against the structural protein of FMD virus.	Number	17	2,59,200	2,16,000	1,72,800	1,29,600	86,400
				Animals tested for antibody against the Non-structural protein of FMD virus.	Number	17	60,000	50,000	40,000	30,000	20,000
2.	<b>Production and supply of diagnostic reagents for Foot and Mouth Disease virus serotyping, serosurveillance and seromonitoring</b>	20	Production and supply of diagnostic reagents for FMD diagnosis and surveillance	Quantity of reagents produced (per test) for typing, LPBE and DIVA ELISA	Number	15	3,24,000	2,70,000	2,16,000	1,62,000	1,08,000
				Quantity of reagents supplied (per test) for typing, LPBE and DIVA ELISA	Number	5	2,91,600	2,43,000	1,94,400	1,45,800	97,200

*	<b>Publication/Documentation</b>	5	Publication of the research articles in the journals having the NAAS rating of 6.0 and above	Research articles published	Number	3	7	6	5	4	3
			Timely publication of the Institute Annual Report (2013-2014)	Annual Report published	Date	2	30.06.2014	02.07.2014	04.07.2014	07.07.2014	09.07.2014
*	<b>Fiscal resource management</b>	2	Utilization of released plan fund	Plan fund utilized	%	2	98	96	94	92	90
*	<b>Efficient Functioning of the RFD System</b>	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
*	<b>Enhanced Transparency / Improved Service delivery of Ministry/Department</b>	3	Rating from Independent Audit of implementation of Citizens' / Clients' 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
*	<b>Administrative Reforms</b>	7	Update organizational strategy to align with revised priorities	Date	Date	2	Nov.1 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

S.No.	Objectives	Actions	Success Indicators	Unit	Actual Value for FY12/13	Actual Value for FY13/14	Target Value for FY14/15	Projected Value for FY15/16	Projected Value for FY16/17
1.	<b>To conduct systematic epidemiological studies on Foot and Mouth Disease</b>	Molecular diagnosis and epidemiology of FMD	Serotype differentiation by multiplex PCR and ELISA	Number	701	1524	600	575	570
			Comparison of nucleotide sequence of FMD virus isolates	Kb	40.1	114.5	120	125	127
			Antigenic characterization of outbreak strains	Number	60	43	45	47	49
		Seromonitoring and serosurveillance against FMD virus	Animals tested for antibody against the structural protein of FMD virus	Number	1,25,457	2,05,669	2,16,000	2,20,000	2,22,000
			Animals tested for antibody against the Non-structural protein of FMD virus	Number	1,10,572	40,733	50,000	55,000	57,000
2.	<b>Production and supply of diagnostic reagents for Foot and Mouth Disease virus serotyping, serosurveillance and seromonitoring</b>	Production and supply of diagnostic reagents for FMD diagnosis and surveillance	Quantity of reagents produced (per test) for typing, LPBE and DIVA ELISA	Number	3,00,500	2,82,400	2,70,000	2,80,000	2,82,000
			Quantity of reagents supplied (per test) for typing, LPBE and DIVA ELISA	Number	2,74,700	2,61,280	2,43,000	2,45,000	2,47,000
*	<b>Publication/Documentation</b>	Publication of the research articles in the journals having the NAAS rating of 6.0 and above	Research articles published	Number	8	11	6	6	6

		Timely publication of the Institute Annual Report (2013-2014)	Annual Report published	Date	--	--	02.07.2014	02.07.2014	02.07.2014
*	<b>Fiscal resource management</b>	Utilization of released plan fund	Plan fund utilized	%	100	100	96	96	96
*	<b>Efficient Functioning of the RFD System</b>	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	--	--
*	<b>Enhanced Transparency / Improved Service delivery of Ministry/Department</b>	Rating from Independent Audit of implementation of Citizens' / Clients' Charter (CCC)	Degree of implementation of commitments in CCC	%	--	--	95	95	95
		Independent Audit of implementation of Grievance Redress Management (GRM) system	Degree of success in implementing GRM	%	--	--	95	95	95
*	<b>Administrative Reforms</b>	Update organizational strategy to align with revised priorities	Date	Date	--	--	Nov.2, 2014	Nov.2, 2014	Nov.2, 2014
		Implementation of agreed milestones of approved Mitigating Strategies for Reduction of potential risk of corruption (MSC).	% of Implementation	%	--	--	90	90	90

		Implementation of agreed milestones for ISO 9001	% of implementation	%	--	--	95	95	95
		Implementation of milestones of approved Innovation Action Plans (IAPs).	% of implementation	%	--	--	90	90	90



## Section 4 (a): Acronyms

S.No.	Acronym	Description
1	FMD	Foot and Mouth Disease
2	ELISA	Enzyme Linked Immune Sorbent Assay
3	DIVA	Differentiation of Infected and Vaccinated Animals
4	NSP	Non Structural Protein
5	LBP	Liquid Phase Blocking
6	PCR	Polymerase Chain Reaction
7	LPBE	Liquid Phase Blocking Enzyme Linked Immune Sorbent Assay
8	PCP	Progressive Control Pathway

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

S. No.	Success indicator	Description	Definition	Measurement	General Comments
1	Serotype differentiation by multiplex PCR and ELISA	Serotype identification is essential part of control measures	Serotype identified from clinical materials	Number of outbreaks diagnosed	Serotype identification depends on samples number and quality
2	Comparison of nucleotide sequence of FMD virus isolates	Nucleotide sequence comparison is the basis for molecular epidemiological studies	Phylogenetic comparison reveals circulating lineage/genotype	Number of samples sequenced at capsid coding region	Number depend on the samples referred from the field
3	Antigenic characterization of outbreak strains	Antigenic analysis is essential for matching of field isolates with vaccine strains	Vaccine matching of field isolates	Number of samples subjected to antigenic analysis	Number depend on the samples revived in cell culture
4	Animals tested for antibody against the	Following vaccination in animals, monitoring post	Measurement of post vaccinal immune	Number of samples tested	Number depend on the samples collected

	structural protein of FMD virus	vaccinal antibody response is the most vital component	response using ELISA		from the field
5	Animals tested for antibody against the Non-structural protein of FMD virus	Monitoring NSP response in animals gives indication about infection	Differentiation of vaccinated animals from infected	Number of samples tested	Number depend on the samples collected from the field
6	Quantity of reagents produced (per test) for typing, LPBE and DIVA ELISA	Production of reagents for three ELISA used in the country	Production of reagents for use in Diagnostic Kits	Reagents produced for number of tests	Production depends on the supply
7	Quantity of reagents supplied (per test) for typing, LPBE and DIVA ELISA	Supply of reagents for three ELISA used in the country	Supply of reagents for use in Diagnostic Kits	Reagents Supplied for number of tests	Supply depends on the demand

**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 from this Organization	What happens if your requirement is not met.
STATE	State Government	Departments	Animal Husbandry	Serotype differentiation by multiplex PCR and ELISA	Monitoring and sample collection	Veterinarians carry out disease monitoring	Refereeing samples collected from suspected animals	Poor surveillance

## Section 6: Outcome/Impact of activities of the Department/Ministry

S.No.	Outcome/Impact	Jointly responsible for influencing this outcome/Impact with the following organization(s)/ department(s)/ministry(ies)	Success Indicator(s)	Unit	2012-13	2013-14	2014-15	2015-16	2016-17
1.	<b>Development of local diagnostics helped in launching FMD Control Programme in the country</b>	Animal Husbandry Departments	Making available diagnostics for FMD diagnosis and surveillance	Number	2,79,700	3,45,990	3,50,000	3,52,000	3,54,000
2.	<b>The epidemiological data generated helped in entry of National FMD control programme in to PCP 3</b>	Animal Husbandry Departments	Characterization of FMD field isolates	Number	225	236	240	245	250

### Past achievement of the success indicators

S.No.	Success indicator (s)	Past Achievements of the Success Indicators							Mean of the Achievements	Projected value for the success indicator for 2014-15 as per the approved 2013-14
		VII 2007- 2008	VI 2008- 2009	V 2009- 2010	IV 2010- 2011	III 2011- 2012	II 2012- 2013	I 2013- 2014		
1	Serotype differentiation by multiplex PCR and ELISA	2258	640	1624	622	562	701	1524	1133	470
2	Comparison of nucleotide sequence of FMD virus isolates	54.3	33.9	85.6	46.7	85.3	40.1	104.5	64.3	65
3	Antigenic characterization of outbreak strains	65	59	35	34	34	60	43	47.1	42
4	Animals tested for antibody against the structural protein of FMD virus.	53670	23609	50479	86261	83742	198597	234006	1,04,337.7	1,20,000
5	Animals tested for antibody against the Non-structural protein of FMD virus.	-	-	2763	31042	39882	40934	51613	33,246.8	1,00,000
6	Quantity of reagents produced (per test) for typing, LPBE and DIVA ELISA	120000	137000	162000	136800	251000	300500	372400	2,11,385.7	2,48,000
7	Quantity of reagents supplied (per test) for typing, LPBE and DIVA ELISA	110000	117000	141485	150240	216420	274700	345990	1,93,690.7	-

**Note:** Number of FMD outbreaks fluctuates every year, which indirectly affect the sample number

### Classification of each of the success indicators in the categories

S.No.	Success Indicator(s)	Input	Activity	Internal Output	External Output	Outcome	Measures Qualitative Aspects
1	Serotype differentiation by multiplex PCR and ELISA	FALSE	FALSE	TRUE	FALSE	FALSE	TRUE
2	Comparison of nucleotide sequence of FMD virus isolates	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
3	Antigenic characterization of outbreak strains	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
4	Animals tested for antibody against the structural protein of FMD virus.	FALSE	FALSE	FALSE	TRUE	FALSE	TRUE
5	Animals tested for antibody against the Non-structural protein of FMD virus.	FALSE	FALSE	FALSE	TRUE	FALSE	TRUE
6	Quantity of reagents produced (per test) for typing, LPBE and DIVA ELISA	FALSE	FALSE	TRUE	FALSE	FALSE	TRUE
7	Quantity of reagents supplied (per test) for typing, LPBE and DIVA ELISA	FALSE	FALSE	FALSE	TRUE	FALSE	TRUE