



Results-Framework Document (RFD)

for

National Research Centre on Plant Biotechnology

(2013-2014)

Address: LBS Bldg., IARI Campus, New Delhi – 110012

Website ID: www.nrcpb.org

Section 1: Vision, Mission, Objectives and Function

Vision:

Contributing to sustainable food, nutritional, ecological and livelihood security of the country through development and deployment of tools and techniques of modern plant biotechnology

Mission:

Enhancing and sustaining crop productivity and quality by generating and harnessing the genomic, bioinformatic and trained human resources in harmony with ecology and environment

Objectives:

1. Strengthening frontier molecular biology research for enhancing agricultural production and productivity
2. Capacity building in Plant Biotechnology

Functions:

- To undertake plant molecular biology research for understanding molecular mechanisms underlying basic biological processes
- To devise tools and techniques of biotechnology for crop improvement
- To apply the knowledge of genomics and bioinformatics for advancing agricultural production
- To serve as a national lead centre for plant molecular biology and biotechnology research and create trained manpower in the area of plant biotechnology.

Section 2: *Inter se* Priorities among Key objectives, Success indicators and Targets

S. N.	Objectives	Wt	Actions	Success Indicators	Unit	Wt	Targets/ criteria value				
							Excellent	V. Good	Good	Fair	Poor
							100	90	80%	70%	60%
1.	Strengthening frontier molecular biology research for enhancing agricultural production and productivity	65	Generation of genomic resources base for gene discovery and crop genetic enhancement	Generation of genomic resources by whole genome sequencing	Mb	12	170	161	145	120	100
				Development of EST sequences in important crops and microbes under different stress conditions.	Mb	12	440	405	350	300	250
			Identification and isolation of useful genes and promoters for the development of transgenics	Mapping of agronomically important QTLs and genes in mandate crops.	Number	7	7	6	5	4	3
				Cloning and characterization of important genes for use in crop improvement	Number	12	12	11	9	7	5
				Designing of constructs for transgenic developments	Number	12	5	4	3	2	1
			Maintenance and up gradation of GM crop & Plant genome database at NRCPB.org	Volume of data added as genomic and EST resources	Number (lakhs)	10	20	19	16	13	10
2	Capacity building in Plant Biotechnology	24	Human resource development	M. Sc. Degree awarded	Number	9	5	4	3	2	1
				Ph.D. Degree awarded	Number	9	6	5	4	3	2
				Long term trainees (training on plant biotechnology research at NRCPB)	Number	6	40	36	30	25	20
	Efficient functioning of RFD system	3	Timely submission of Draft RFD (2013-14) for approval	On-time submission	Date	2	15/05/2013	16/05/2013	17/05/2013	20/05/2013	21/05/2013
			Timely submission of Results for RFD (2012-13)	On-time submission	Date	1	01/05/2013	02/05/2013	05/05/2013	06/05/2013	07/05/2013
	Administrative Reforms	4	Implement ISO 9001 as per the approved action plan.	% Implementation	%	2	100	95	90	85	80
			Prepare an action plan for	On-time submission	Date	2	30/07/2013	10/08/2013	20/08/2013	30/08/2013	10/09/2013

		Innovation								
Improving internal efficiency /responsiveness / service delivery of Ministry / Department	4	Implementation of Sevottam	Independent Audit of Implementation of Citizen's Charter	%	2	100	95	90	85	80
			Independent Audit of implementation of public grievance redressal system	%	2	100	95	90	85	80

Section 3: Trend Values of the Success Indicators

S. N.	Objective	Action	Success Indicators.	Unit	Actual Value for FY 11-12	Actual Value for FY 12-13	Target Value for FY 13-14	Projected Value for FY 14-15	Projected Value for FY 15-16
1.	Strengthening frontier molecular biology research for enhancing agricultural production and productivity	Generation of genomic resources base for gene discovery and crop genetic enhancement	Generation of genomic resources by whole genome sequencing	Mb	11864 [#]	200	161	170	180
			Development of EST sequences in important crops and microbes under different stress conditions.	Mb	0.2 [#]	620	405	440	475
		Identification and isolation of useful genes and promoters for the development of transgenic	Mapping of agronomically important QTLs and genes in mandate crops.	Number	37 [#]	6	6	7	8
			Cloning and characterization of important genes for use in crop improvement	Number	10 [#]	5	11	12	12
			Designing of constructs for transgenic developments	Number	3 [#]	5	4	5	6
		Maintenance and up gradation of GM crop & Plant genome database at NRCPB.org	Volume of data added as genomic and EST resources	Number (lakhs)	19	18	19	19	20
2	Capacity building in Plant Biotechnology	Human resource development	M. Sc. Degree awarded	Number	5	5	4	4	4
			Ph.D. Degree awarded	Number	2	2	5	5	5
			Long term trainees (training on plant biotechnology research at NRCPB)	Number	66	47	36	40	40
	Efficient functioning of RFD system	Timely submission of Draft RFD (2013-14) for approval	On-time submission	Date			16/05/2013		
			On-time submission	Date			02/05/2013		
	Administrative Reforms	Implement ISO 9001 as per the approved action plan.	% Implementation	%			95		
			On-time submission	Date			10/08/2013		
	Improving internal efficiency /responsiveness / service delivery of Ministry / Department	Implementation of Sevottam	Independent Audit of Implementation of Citizen's Charter	%			95		
			Independent Audit of implementation of public grievance redressal system	%			95		

Since they are need based research work the values may not be consistent

Section 4: Acronyms

S.No	Acronym	Description
1	EST	Expressed Sequence Tags
2	QTL	Quantitative Trait Loci
3	Mb	Mega base pair
4	GM	Genetically Modified
5	NRCPB	National Research Centre on Plant Biotechnology
6	M. Sc	Master of Science
7	Ph. D	Doctorate in Philosophy
8	SAU	State Agricultural Universities
9	UAS	University of Agricultural Sciences
10	ICGEB	International Centre for Genetic Engineering and Biotechnology
11	IIT	Indian Institute of Technology

Section 4: Description and Definition of Success Indicators and Proposed Measurement Methodology

Sl. No.	Success indicator	Description	Definition	Measurement	General Comments
1	Generation of genomic resources by whole genome sequencing	Genome sequencing projects are the basis for many aspects of molecular biology and precise crop breeding or enhancement such as gene discovery, isolation and marker development	Total no of bases sequenced in different crops genome	Mb	-
2	Development of EST sequences in important crops and microbes under different stress conditions.	This is also sequence information related or specific to functional aspects of gene	Total no of bases sequenced in different ESTs of different crops and microbes under stress	Mb	-
3	Mapping of agronomically important QTLs and genes in mandate crops.	This is an important step for dissecting agronomically and nutritionally important traits which have a complex inheritance pattern	Total no. of QTLs and genes, which are mapped in different mandate crops	Number	-
4	Cloning and characterization of important genes for use in crop improvement	This is an important step in unraveling the role of individual genes	Total No. of genes cloned and characterized	Number	-
5	Designing of constructs for transgenic developments	This is an important step in transgenic development which are required for both functional validation of genes and crop improvement	How many number of transgenic have been developed	Number	-

6	Volume of data added as genomic and EST resources	This is major resource repository of all the sequence related information available across the world	How much volume (number of entries) of data is incorporated in the database	Number (lakhs)	-
7	M. Sc. Degree awarded	Pertains to human resource development which is one of the major mandate of the organization	No. of students awarded M.Sc degree during the year	Number	-
8	Ph.D. Degree awarded	Pertains to human resource development which is one of the major mandate of the organization	No. of students awarded Ph.D. degree during the year	Number	-
9	Long term trainees (training on plant biotechnology research at NRCPB)	Pertains to human resource development which is one of the major mandate of the organization; generates revenue	No. of long term trainees trained for dissertation work during the academic year	Number	-

Section 5: Specific Performance requirement from other department

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?
Urban	Punjab	SAU	Punjab Agriculture University, Ludhiana	Generation of genomic resources by whole genome sequencing	Project/Research collaboration	Sharing expertise	5	No major impact
Urban	Delhi	University	Delhi University, Delhi	Generation of genomic resources by whole genome sequencing	Project/Research collaboration	Sharing expertise	5	No major impact
Urban	Karnataka	University	UAS, Bangalore	Cloning and characterization of important genes for use in crop improvement	Project/Research collaboration	Sharing expertise	5	No major impact
Urban	Delhi	International Institute	ICGEB, New Delhi	Cloning and characterization of important genes for use in crop improvement	Project/Research collaboration	Sharing expertise	5	No major impact
Urban	Uttar Pradesh	National Institute	IIT, Kanpur	Cloning and characterization of important genes for use in crop improvement	Project/Research collaboration	Sharing expertise	5	No major impact
Urban	Delhi	Funding Agency	Department of Biotechnology	Generation of genomic resources by whole genome sequencing	Project funding	Project oriented additional funding	15	No major impact
Urban	Delhi	Funding Agency	Department of Science and Technology	Development of EST sequences in important crops and microbes under different stress conditions	Project funding	Project oriented additional funding	5	No major impact

**Section 6:
Outcome / Impact of activities of organization***

Sl. No	Out Come/Impact of Organization	Jointly responsible for influencing this outcome / impact with the following organization	Success Indicators	Unit	2011-12	2012-13	2013-14	2014-15	2015-16

* As per the suggestion, a brain Storming session in the Institute with all the Scientists/staff, Chairman QRT, RAC and IMC and Ex.-Directors will be conducted as early as possible to decide the Outcome/ Impact of activities of organization