



Results- Framework Document (RFD)

for

**INDIAN INSTITUTE OF VEGETABLE RESEARCH
(2013 –2014)**

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Section 1: Vision, Mission, Objectives and Functions

Vision

Vegetables for food & nutritional security and sustainable inclusive growth.

Mission

To contribute significantly to the nutritional security of India through research, education and extension on vegetables in collaboration with national and international partners for enhancing productivity and profitability, achieving sustainable food, and alleviating rural poverty.

Objectives

1. Improvement of vegetable crops for high yield, quality and resistance to biotic and abiotic stress.
2. Enhancing productivity and quality through efficient input management, plant health management including post harvest management and value addition.
3. Dissemination of technology.

Functions

To plan, coordinate, implement and monitor R&D programmes for sustainable vegetable production and resource conservation.

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

S.No	Objective	Weight	Action	Success indicator	Unit	Weight	Target /Criteria Value				
							Excellent	Very Good	Good	Fair	Poor
							100%	90%	80%	70%	60%
1.	Enhancing productivity and quality through efficient input management, plant health management including post harvest management and value addition	38	Development of efficient production technologies	Technologies for improving input use efficiencies in field and protected cultivation	Number	12	7	6	5	4	3
			Development of eco-friendly protection technologies	Characterization and documentation of pathogens including PCR based diagnostics	Number	8	55	50	45	40	35
				Identification of effective components of pest management and development of IPM/IDM technologies	Number	10	4	3	2	1	-
			Post harvest management and value addition	Technology for value addition including increasing the shelf life of vegetables	Number	8	7	6	5	4	3
2.	Improvement of vegetable crops for high yield, quality and resistance to biotic and abiotic stresses	29	Collection, conservation, evaluation and utilization of germplasm	Addition of new germplasm and identification of germplasm for specific traits	Number	12	135	125	100	75	50
			Development of varieties/hybrids	Identification and validation of markers, mapping of QTLs and genes	Number	10	5	4	3	2	1
				Identification/rele	Number	7	3	2	1	-	-

				ase of varieties/ hybrids							
3.	Dissemination of technology	22	Popularization of IIVR varieties/hybrids	Breeder's seed production	Kg	11	2400	2350	2250	2150	2100
			Popularization of vegetable technologies	Organization of training/ demonstration/ exhibition	Number	11	85	80	75	70	65
	*Efficient functioning of RFD system	3	Timely submission of draft RFD (2013-14) for approval	On-time submission	Date	2	15/05/20 13	16/05/201 3	17/05/201 3	20/05/201 3	21/05/201 3
			Timely submission of Results for RFD (2012-13)	On-time submission	Date	1	01/05/20 13	02/05/201 3	05/05/201 3	06/05/201 3	07/05/201 3
	Administrative reforms	4	Implement ISO 9001 as per the approved action plan	% Implementation	%	2	100	95	90	85	80
			Prepare an action plan for Innovation	On-time submission	Date	2	30/07/20 13	10/08/201 3	20/08/201 3	30/08/201 3	10/09/201 3
	Improving internal efficiency/responsiveness/ service delivery of Ministry/Department	4	Implementatio n of <i>Sevottam</i>	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.No.	Objectives	Actions	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.	Enhancing productivity and quality through efficient input management, plant health management including post harvest management and value addition	Development of efficient production technologies	Technologies for improving input use efficiencies in field and protected cultivation	Number	-	-	6	6	7
		Development of eco-friendly protection technologies	Characterization and documentation of pathogens including PCR based diagnostics	Number	-	-	50	52	55
			Identification of effective components of pest management and development of IPM/IDM technologies	Number	-	-	3	4	5
		Post harvest management and value addition	Technology for value addition including increasing the shelf life of vegetables	Number	-	-	6	6	7
2.	Improvement of vegetable crops for high yield, quality and resistance to biotic and abiotic stresses	Collection, conservation, evaluation and utilization of germplasm	Addition of new germplasm and identification of germplasm for specific traits	Number	-	-	125	135	150
		Development of varieties/hybrids	Identification and validation of markers, mapping of QTLs and genes	Number	-	-	4	5	6
			Identification/release of varieties/ hybrids	Number	-	-	2	2	3
3.	Dissemination of technology	Popularization of IIVR varieties/hybrids	Breeder's seed production	Kg	-	-	2350	2375	2400
		Popularization of vegetable technologies	Organization of training/ demonstration/ exhibition	Number	-	-	80	95	100
	*Efficient functioning of RFD system	Timely submission of draft RFD (2013-14) for approval	On-time submission	Date			16/05/2013		
		Timely submission of Results for RFD (2012-13)	On-time submission	Date			02/05/2013		

	Administrative reforms	Implement ISO 9001 as per the approved action plan	% Implementation	%			95		
		Prepare an action plan for Innovation	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		

* The actions and success indicators of the objectives for RFD of 2013-14 has been modified (which are different from those mentioned in RFD of 2012-13) and therefore the actual values for financial years 2011-12 and 2012-13 are not reflected in the above table (Section 3)

Section 4:

Acronyms

S.No.	Acronym	Description
1.	R&D	Research and Development
2.	QTLs	Quantitative Trait Loci
3.	IPM	Integrated Pest Management
4.	IDM	Integrated Disease Management
5.	IIVR	Indian Institute of Vegetable Research
6.	PCR	Polymerase Chain Reaction
7.	DNA	Deoxyribo Nucleic Acid
8.	GOI	Government of India
9.	MOA	Ministry of Agriculture
10.	DAC	Department of Agriculture and Cooperation
11.	SAUs	State Agricultural Universities
12.	NHB	National Horticulture Board
13.	NHM	National Horticulture Mission
14.	APEDA	Agricultural and Processed Food Products Export Development Authority
15.	KVKs	Krishi Vigyan Kendras
16.	NGOs	Non-Government Organizations

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

S. No.	Success indicator	Description	Definition	Measurement	General comments
1.	Addition of new germplasm and identification of germplasm for specific traits	Germplasm is the basic requirement to develop improved varieties	Germplasm are the basic raw materials for crop improvement	Number of new germplasm collected and identified for specific traits	Germplasm of different vegetable crops including underutilized genetic resources is collected for utilization/sharing to develop improved/elite lines with specific traits and to enhance the gene pool.
2.	Identification and validation of markers, mapping of QTLs/genes	Markers are short DNA sequence developed/validated through mapping QTLs/genes for specific traits and can be used in marker-	Molecular markers are DNA sequences also called tags for particular traits in any species which can be used for	Number of markers identified/validated	Markers are used for identifying traits of interest and can be used for the development of improved vegetable varieties

		assisted selection in vegetable breeding programme	improvement of existing/new varieties		and also to study the inter-relationships of individuals
3.	Identification/release of varieties/ hybrids	Varieties/hybrids are identified/ developed through adopting breeding procedures involving selected germplasm	Varieties are genotypes commonly cultivated by the growers.	Number of varieties/hybrids identified/developed	Vegetable varieties are developed for different attributes after multilocation testing under different ecological conditions
4.	Technologies for improving input use efficiencies in field and protected cultivation	Nutrient management/water management/cultivation/resource conservation packages are evaluated for improving in input use efficiency	Nutrient management/water management/cultivation/resource conservation packages refers to the management and maintenance of soil/water/plant/inputs/ecosystem at an optimum level for enhancing the input use efficiency	Number of technologies tested/validated/developed for improving input use efficiencies in vegetable crops	To ensure higher productivity/profitability and sustainability of vegetable production systems
5.	Characterization and documentation of pathogens including PCR based diagnostics	Identification of pathogen through both conventional and molecular techniques are done for accurate and speedy identification of causal organisms based on that specific measures can be used for specific disease control	Accurate diagnosis of pathogen is the first step in any pest/disease management programme. This refers to apart from identification through conventional method, utilization of advanced biotechnological tools for accurate and speedy identification of pathogens	Number of pathogens identified/characterized and diagnostics developed	Precision and accurate identification of the pathogen for which pin pointed control measures can be used to avoid unnecessary / unwarranted control measures for sustainable vegetable production
6.	Identification of effective components of pest management and development of IPM/IDM technologies	Different IPM/IDM components like use of semiochemicals / cultural control/ biopesticides /chemicals are evaluated for ecofriendly pest management	IPM/IDM technology refers to use of integrated control methods for pest and disease and improving environmental health and sustaining high productivity	Number of effective components identified and IPM/IDM technologies developed	To ensure less use of harmful pesticides for quality vegetable production and environmental safety
7.	Technology for value addition including increasing the shelf life of vegetables	Edible coating such as carnauba wax, steeping preservation, with hurdle concept and suitable packaging materials are evaluated for extending the shelf life of fresh vegetables. Osmo-air drying, development of fermented vegetable product and nutraceutical rich functional foods are carried out for various value	Shelf life extension refers to methods for delaying postharvest senescence and maintenance of quality of vegetable for longer period. Value addition refers to the processing methods involving dehydration, concentration, fermentation, etc. to develop stable products for various value added processed vegetables	Number of technologies for value addition including increasing the shelf life of vegetables tested/validated/developed	The extension of shelf life and value added products would reduce the huge postharvest losses in terms of both quality and quantity and generate employment to rural men and women

		added processed vegetables			
8.	Breeder's seed production	Breeder seeds are required to be produced to maintain the quality of seeds	Breeder seeds are the first link in National Seed Production chain which are essential for production of Foundation and Certified seed down the chain	Quantity of seeds produced	The quantity of breeder seeds produced may vary depending upon the indents from GOI
9.	Organization of training/ demonstration/ exhibition	Organize training/ demonstrations/ exhibition on improved production and protection technologies in vegetable crops for farmers and other stake holders	To enable dissemination of technologies for enhancing technology adoption	Number of trainings/ demonstration/ exhibition organized/ conducted	To enhance the productivity through wider adoptability of improved technologies in vegetable crops for livelihood and nutritional security

Section 5:

Specific Performance Requirements from other Departments

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 Governments	Andaman & Nicobar Islands, North Eastern Hilly States	Departments	State Biodiversity Authority/Forest Department	Addition of new germplasm and identification of germplasm for specific traits	Permission for survey and collection of germplasm	Without permission it is illegal to enter the reserved forest for collection	Number of permission letters issued	Less number of germplasm accessions will be collected
State Governments	All states	Departments	Directorate of Extension, MOA/ Development Departments	Organization of training/ demonstration/ exhibition	Sponsoring farmers/extension personnel for training	If trainees are not deputed, they cannot be imparted training	Number of candidates sponsored	Less number of trainings will be conducted

Section 6: Outcome/Impact of activities of Organization/ Ministry

S. No.	Outcome/Impact of organization /RCs	Jointly responsible for influencing this outcome/impact with the following organization(s)/ departments/ministry(s)	Success Indicators	Unit	2011-12	2012-13	2013-14	2014-15	2015-16
1.	Production of quality seed of vegetable crops, development of improved varieties and technologies including value added products	DAC/ SAUs/ NHB/NHM/ APEDA/ State line departments / KVKs/ NGOs etc.	Increase in production of vegetable crops	%	2.0	2.5	2.5	3.0	3.0
			Popularization of varieties/hybrids in terms of increase in breeder's seed production	Quintals	23.50	24.00	24.50	25.00	25.50
			Increase in awareness of stakeholders through training and demonstrations	%	40	45	50	55	60