



# **Results Framework Document (RFD)**

**for**

**Central Institute for Subtropical Horticulture**

**(2014 – 2015)**

**Address: Rehmankhara, P.O. Kakori, Lucknow-226 101 (India)**

**Website ID : [www.cish.res.in](http://www.cish.res.in)**

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

### **Vision**

To conduct basic and strategic research in frontier areas for development of cost effective and viable technologies.

### **Mission**

Augmenting the share of agriculture sector in general and horticulture in particular in AGDP of the country and its export basket.

### **Objectives**

1. Improving productivity through collection, evaluation and conservation of genetic resources
2. Enhancing productivity and profitability.
3. Human resource development and transfer of technology.

### **Functions**

- To enhance the productivity of subtropical fruit crops and improve the livelihood options in a sustainable manner.

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

Sl. No.	Objectives	Weight	Actions	Success Indicators	Unit	Weight	Target/Criteria Value					
							Excellent	Very Good	Good	Fair	Poor	
							100%	90%	80%	70%	60%	
1	Improving productivity through collection, evaluation and conservation of genetic resources	30	Collection of trait specific genetic resources	Accessions added to field gene bank								
				Mango	No.	5	34	28	22	16	10	
				Guava	No.	5	26	22	18	14	10	
			Evaluation of germplasm	Germplasm evaluated for specific horticultural traits								
				Mango	No.	5	54	45	36	27	18	
				Guava	No.	5	34	28	22	16	10	
				Germplasm evaluation against								
				Leaf webber	No.	5	50	45	40	35	30	
Fruit borer	No.	5	50	45	40	35	30					
2	Enhancing productivity and profitability	25	Production of quality planting materials of mandate crops	Quality planting materials produced	No.	10	140000	126000	112000	98000	84000	
			Development of package schedule for management of leaf webber, fruit borer and shoulder browning in mango	Schedule developed	No.	5	4	3	2	1	0	
			Development of intercropping modules for mango orchards	Modules developed	No.	5	10.1.2015	15.2.2015	20.3.2015	25.3.2015	30.3.2015	
			Development of value added products and filing of patents	Value added products developed and patents filed	No.	5	5	4	3	2	1	

3	Human resource development and transfer of technology	25	Organization of training programmes	Trainings organized	No.	10	23	19	15	11	17
			Demonstration of technologies for crop health management (management of fruit flies, stem borer, anthracnose and shoulder browning in mango) in farmer's field	Number of orchards covered	No.	10	10	9	8	7	6
			On farm demonstration on canopy management under high density planting in guava	Number of farmers benefitted	No.	5	26	22	18	14	10
•	Publication/Documentation	5	Publication of the research articles in the journals having the NAAS rating of 6.0 and above	Research articles published	No.	3	5	4	3	2	1
			Timely publication of the Institute Annual Report (2013-2014)	Annual Report published	Date	2	30.6.2014	2.7.2014	4.7.2014	7.7.2014	9.7.2014
•	Fiscal resource management	2	Utilization of released plan funds	Plan funds 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 Citizens' / Clients' Charter (CCC)	Degree of implementation of commitments in CCC	%	2	100	95	90	85	80
			Independent Audit of	Degree of success in	%	1	100	95	90	85	80

			implementation of Grievance Redress Management (GRM) system	implementing GRM							
•	Administrative Reforms	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 Plan (IAPs).	% of implementation	%	2	100	90	80	70	60

### Section-3 : Trend Values of the Success Indicators

Sl. No.	Objectives	Actions	Success Indicators	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 productivity through collection, conservation and evaluation of genetic resources	Collection of trait specific genetic resources	Accessions added to field gene bank							
			Mango	No.	25	30	28	32	35	
			Guava	No.	12	20	22	30	30	
		Evaluation of germplasm	Germplasm evaluated for specific horticultural traits							
			Mango	No.	69	51	45	75	80	
			Guava	No.	30	30	28	36	40	
			Germplasm evaluation against							
			Leaf webber	No.	-	-	45	60	70	
			Fruit borer	No.	-	-	45	60	70	
2	Enhancing productivity and profitability	Production of quality planting materials of mandate crops	Quality planting materials produced	No.	123000	138100	126000	145000	150000	
		Development of package schedule for management of leaf webber, fruit borer and shoulder browning in mango	Schedule developed	No.	-	-	3	4	4	
		Development of intercropping modules for mango orchards	Modules developed	No.	-	-	15-02-15	-	-	

		Development of value added products and filing of patents	Value added products developed and patents filed	No.	4	7	4	5	6
3	Human resource development and transfer of technology	Organization of training programmes	Trainings organized	No.	13	27	19	31	33
		Demonstration of technologies for crop health management (management of fruit flies, stem borer, anthracnose and shoulder browning in mango) in farmer's field	Number of orchards covered	No.	-	-	9	15	25
		On farm demonstration on canopy management under high density planting in guava	Number of farmers benefitted	No.	-	-	22	50	75
•	Publication/Documentation	Publication of the research articles in the journals having the NAAS rating of 6.0 and above	Research articles published	No.	5	5	4	7	8
		Timely publication of the Institute Annual Report (2013-2014)	Annual Report published	Date			2.7.2014		
•	Fiscal resource management	Utilization of released plan fund	Plan fund utilized	%	99.54	99.06	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 Citizens' / Clients' 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

Sl. No	Acronym	Description
1.	HRD	Human Resource Development
2.	IPR	Intellectual Property Right
3.	PCR	Polymerase Chain Reaction
4.	TOT	Transfer of Technology
5.	GDP	Gross Domestic Product
6.	AGDP	Agricultural Gross Domestic Product
7.	CISH	Central Institute for Subtropical Horticulture

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

Sl. No.	Success indicator	Description	Definition	Measurement	General Comments
1.	Accessions of mango and guava added to field gene bank	Trait specific germplasm of mango and guava available in the country would be collected.	Trait specific germplasm would be conserved in the field genebank.	Number	Trait specific accessions
2.	Germplasm of mango and guava evaluated for specific horticultural traits	Germplasm collected would be rigorously evaluated for specific traits including colour, shelf life etc and conserved.	Germplasm evaluated for specific traits would be identified and subsequently incorporated and utilized for developing trait specific varieties	Number	Breeding efficiency enhancement
3.	Germplasm evaluated against leaf webber and fruit borer	Germplasm would be evaluated against infestation of leaf webber and fruit borer in mango.	Germplasm evaluated against infestation of leaf webber and fruit borer in mango would be identified for its resistance and tolerance.	Number	Resistant/tolerant germplasm identified
4.	Quality planting materials	Varieties of mango and guava developed at the Institute and elite planting materials of aonla and bael would be multiplied through conventional methods.	Quality planting materials would be made available to end users.	Number	Production of core quality planting materials with traceability integrated
5.	Schedules developed	Management schedules would be evolved against infestation/infection of leaf webber, fruit borer and shoulder browning in mango.	Management schedules would be available for the end users.	Number	Management schedules for pest and diseases
6.	Modules developed	Crops would be evaluated for mango based cropping system.	Crop(s) would be identified for factor productivity in mango based cropping system.	Number	Factor productivity enhancement

7.	Value added products developed and patents filed	<ul style="list-style-type: none"> <li>• Identification of different value added products from mandate crops.</li> <li>• Innovative ideas, processes / protocols / technologies developed would be advanced to patents filing.</li> </ul>	Development of innovations	Number	IPR harmonization
8.	Trainings organized	Capacity building programmes related to production, protection and post harvest management knowledge and skill improvement/development; programmes would be conducted for end-users (farmers, rural youth and extension personnel)	End-users would be made aware of new skills/ technologies generated in mandate crops through lectures, demonstrations, field visits etc.	Number	TOT; capacity building augmentation
9.	Number of orchards covered	Demonstration of technologies for crop health management (management of fruit flies, stem borer, anthracnose and shoulder browning in mango) would be made in the farmer's field.	End-users would be made aware of technologies required for management of fruit flies, stem borer, anthracnose and shoulder browning in mango.	Number	Awareness about the technologies dissemination
10.	Number of farmers benefitted	On-farm demonstration on canopy management under high density planting in guava would be made.	End-users would be made aware of new skills/technologies generated in mandate crops through lectures, demonstrations, field visits etc.	Number	Awareness about the technologies dissemination

### 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
NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL

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

S. N.	Outcome / Impact	Jointly responsible for influencing this outcome / impact with the following organisation (s) / departments/ministry(ies)	Success Indicator (s)	Unit	2012-13	2013-14	2014-15	2015-16	2016-17
	Sustainable productivity due to production of quality planting material at CISH	Orchardists of respective crops/State Horticulture Department	Expansion in area of mandate crops due to supply of quality planting material	hectare	2836	3947	5069	6219	7776

**Table for setting the Agreed Performance Targets**

S.N.	Success Indicator (s)	Past Achievements of the Success Indicators					Mean of the Achievements	Projected value of the success indicator for 2014-15 as per the approved RFD 2013-14
		2009-2010	2010-11	2011-12	2012-13	2013-14		
1.	Accessions added to field gene bank							
	Mango	32	33	15	25	30	27	30
	Guava	11	14	10	12	20	13.4	25
2.	Germplasm evaluated for specific horticultural traits							
	Mango	42	42	43	69	51	49.4	50
	Guava	22	30	21	30	30	26.6	32
3.	Germplasm evaluated against							
	Leaf webber	-	-	-	-	-	-	-
	Fruit borer	-	-	-	-	-	-	-
4.	Quality planting materials	90287	73907	99189	123000	138100	104896.6	154000
5.	Schedules developed	-	-	-	-	-	-	-
6.	Modules developed	-	-	-	-	-	-	-
7.	Value added products developed and patents filed	3	8	1	4	7	4.6	3
8.	Trainings organized	10	14	8	27	27	17.2	24
9.	Number of orchards covered	-	-	-	-	-	-	-
10.	Number of farmers benefitted	-	-	-	-	-	-	-

### Classification of Success Indicators according to its Category

Sl. No.	Success indicator	Input	Activity	Internal Output	External Output	Outcome	Measures Qualitative Aspects
1.	Accessions added to field gene bank	False	True	False	False	False	(False) Collection and conservation of biodiversity wealth of nation is important
	Mango						
	Guava						
2.	Germplasm evaluated for specific horticultural traits	False	True	False	False	False	(False) For efficient breeding programme or direct utilization for commercial purpose.
	Mango						
	Guava						
3.	Germplasm evaluated against	False	True	False	False	False	(False) For efficient breeding programme or direct utilization for commercial purpose.
	Leaf webber						
	Fruit borer						
4.	Quality planting materials	False	False	False	False	True	(True) Required for increasing production/productivity.
5.	Schedules developed	False	False	False	False	True	(True) Required for crop health management
6.	Modules developed	False	False	False	False	True	(True) Required for increasing factor productivity.
7.	Value added products developed and patents filed	False	True	False	False	False	(False) To safeguard IPR issues
8.	Trainings organized	False	False	False	False	True	(True) For effective dissemination of technologies required for strengthening horticultural crop production system
9.	Number of orchards covered	False	False	False	False	True	(True) For effective dissemination of technologies required for strengthening horticultural crop production system
10.	Number of farmers benefitted	False	False	False	False	True	(True) For effective dissemination of technologies required for strengthening horticultural crop production system

## Annual (April 1, 2014 to March 31, 2015) Performance Evaluation Report in respect of RFD 2014-2015 of ICAR-CISH, Lucknow

Name of the Division: Horticultural Science

Name of the Institution: ICAR-Central Institute for Subtropical Horticulture

RFD Nodal Officer: Dr. R.M.Khan

Sl. No.	Objective(s)	Weight	Action(s)	Success Indicator(s)	Unit	Weight	Target/Criteria Value					Achievements	Performance		Percent achievements against Target values of 90% Col.	*Reasons for shortfalls or excessive achievements, if applicable	
							Excellent	Very Good	Good	Fair	Poor		Raw Score	Weighted Score			
							100%	90%	80%	70%	60%						
1	Improving productivity through collection, evaluation and conservation of genetic resources	30	Collection of trait specific genetic resources	Accessions added to field gene bank													
				Mango	No.	5	34	28	22	16	10	35	100	5	125.0	Achievement increased due to inclusion of farmer's varieties for registration under PPV&FRA.	
			Guava	No.	5	26	22	18	14	10	27	100	5	122.7			
			Evaluation of germplasm	Germplasm evaluated for specific horticultural traits													
			Mango	No.	5	54	45	36	27	18	47	92.2	4.61	104.4	NA		
Guava	No.	5	34	28	22	16	10	34	100	5	121.4	Besides committed target some additional germplasm (5 nos.) were					

																received from, Taiwan, NBPGR and Raipur for evaluation was also included in the programme.
				Germplasm evaluation against												
				Leaf webber	No.	5	50	45	40	35	30	<b>50</b>	<b>100</b>	<b>5</b>	<b>111.1</b>	Leaf webber and stem borer have emerged as important problem causing immense damages to mango. Hence performance of some of the hybrids not included in the schedule earlier was also evaluated because of the exigency of the issue.
				Fruit borer	No.	5	50	45	40	35	30	<b>50</b>	<b>100</b>	<b>5</b>	<b>111.1</b>	
2	Enhancing productivity and profitability	25	Production of quality planting materials of mandate crops	Quality planting materials produced	No.	10	140000	126000	112000	98000	84000	<b>130000</b>	<b>92.9</b>	<b>9.29</b>	<b>103.2</b>	NA
			Development of package schedule for	Schedule developed	No.	5	4	3	2	1	0	<b>4</b>	<b>100</b>	<b>5</b>	<b>133.3</b>	Under consultancy programmes



			management of leaf webber, fruit borer and shoulder browning in mango												being undertaken at the Institute some more requests were received from pesticide companies for evaluation of pesticides/fungicides which were not anticipated initially. The data generated was utilized for development of package schedules.	
			Development of intercropping modules for mango orchards	Modules developed	No.	5	1 10.1.15	1 15.2.15	1 20.3.15	1 25.3.15	1 30.3.15	<b>1</b> <b>30.1.2015</b>	<b>95.56</b>	<b>4.78</b>	<b>100.0</b>	NA
			Development of value added products and filing of patents	Value added products developed and patents filed	No.	5	5	4	3	2	1	<b>Products -5</b> <b>Patents-1</b>  <b>6</b>	<b>100</b>	<b>5</b>	<b>150.0</b>	Under the collaborative programme conceived with NRCSS, Ajmer ICAR Institute some additional work was taken up

																earlier. The final results pertaining to product development could be finalized during this period.
3	Human resource development and transfer of technology	25	Organization of training programmes	Trainings organized	No.	10	23	19	15	11	07	<b>22</b>	<b>97.5</b>	<b>9.75</b>	<b>115.7</b>	Target under the training programme and visit of farmer have exceeded on account of the requests received from sponsoring agencies like NHB and state Govt (Himachal Pradesh) for training and farmer's visits for demonstrations
			Demonstration of technologies for crop health management (management of fruit flies, stem borer, anthracnose and shoulder browning in mango) in farmer's field	Number of orchards covered	No.	10	10	9	8	7	6	<b>10</b>	<b>100</b>	<b>10</b>	<b>111.1</b>	
			On farm demonstration on canopy management under high density planting in guava	Number of farmers benefited	No.	5	26	22	18	14	10	<b>27</b>	<b>100</b>	<b>5</b>	<b>122.7</b>	
	Publication/Documentation	5	Publication of the research articles in the journals having the	Research articles published	No.	3	5	4	3	2	1	<b>7</b>	<b>100</b>	<b>3</b>	<b>175.0</b>	Achievements under publication could increase because of the



Enhanced Transparency / Improved Service delivery of Ministry/Department	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	95	<b>90.0</b>	<b>1.8</b>			
		Independent Audit of implementation of Grievance Redress Management (GRM) system	Degree of success in implementing GRM	%	1	100	95	90	85	80	95	<b>90.0</b>	<b>0.9</b>			
Administrative Reforms	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	Nov.2 2014	<b>90.0</b>	<b>1.8</b>			
		Implementation of agreed milestones of approved Mitigating Strategies for Reduction of potential risk of corruption (MSC).	% of Implementation	%	1	100	90	80	70	60	90	<b>90.0</b>	<b>0.9</b>			
		Implementation of agreed milestones for	% of implementation	%	2	100	95	90	85	80	95	<b>90.0</b>	<b>1.8</b>	<b>100</b>		

			ISO 9001													
			Implementati on of milestones of approved Innovation Action Plan (IAPs).	% of implementati on	%	2	100	90	80	70	60	90	<b>90.0</b>	<b>1.8</b>	<b>100</b>	

**Total Composite Score: 97.43**

**Rating : Excellent**

**Actual Scientific Staff in position in the Institute and their research articles publications published in International and National Journals having NAAS rating 6.00 or more during April 1, 2014-March 31, 2015**

**ICAR-Central Institute for Subtropical Horticulture**

<b>S.No.</b>	<b>Category of Scientific Staff</b>	<b>Actual Scientific Staff in position (Nos.)</b>	<b>Research articles publications as first /corresponding author (Nos.)</b>	<b>Publication productivity* (Number of research articles publications divided by number of Scientists)</b>
1.	Principal Scientist	16	06	0.38
2.	Senior Scientist	05	00	0.00
3.	Scientist	18	01	0.06
<b>Total</b>		<b>39</b>	<b>07</b>	<b>0.18</b>