Results-Framework Document (RFD)

for

Central Institute for Subtropical Horticulture
(2013-2014)

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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 GDP in the country and its export basket.

Objectives

1. Improving productivity through collection ,conservation and evaluation of genetic resources
2. Enhancing productivity, profitability through improved production ,disease management and quality planting material and value addition
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

S.N.	Objectives	Weight	Action	Success Indicators	Unit	Weight	Target/Criteria Value				
							Excellent	Very Good	Good	Fair	Poor
							100%	90%	80%	70%	60%
1.	Improving productivity through collection, conservation and evaluation of genetic resources	40	Collection of trait specific genetic resources	Accessions added to field gene bank							
				Mango	No.	10	28	25	22	20	17
				Guava	No.	10	20	18	16	14	12
			Evaluation of germplasm	Germplasm evaluated for specific traits							
				Mango	No.	10	45	41	36	32	21
				Guava	No.	10	28	25	22	20	17
2.	Enhancing productivity, profitability through improved production, disease management and quality planting and value addition	30	Development of compatible cropping systems	Number of compatible intercrops		5					
				Mango	No.		8	7	6	5	4
			Integrated management of shoulder browning disease	Treatment schedule							
				Mango	No.		5	4	3	2	1
			Evaluation of new insecticides molecules	Insecticides tested		5					
				Hopper	No.		5	4	3	2	1
				Mealybugs	No.		6	5	4	3	2
				Thrips	No.		6	5	4	3	2

			Evaluation of new fungicides molecules	Fungicides tested		5					
				Blossom Blight	No.		8	7	6	5	2
				Anthracnose	No.		5	4	3	2	0
				Powdery mildew	No.		5	4	3	2	0
			Development of PCR based disease diagnostics for detection of anthracnose of mango	Designing of primers	No.	5	15	13	12	10	8
			Production of quality planting materials of mango, aonla, bael and guava through conventional system	Planting materials of mango, aonla, bael and guava produced	No.	5	138000	124200	110400	96600	82800
			Value addition	Technologies/ products developed	No.	5	3	2	1	0	0
				Patents filed	No.		2	1	0	0	0
3.	Human resource development and transfer of technology	19	Organization of training programmes	Trainings organized	No.	19	20	18	16	14	10
	Efficient Functioning of the 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 Innovation	On-time submission	Date	2	30/07/ 2013	10/08/ 2013	20/08/ 2013	30/08/ 2013	10/09/ 2013

	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.	Objectives	Actions	Success Indicators	Unit	Actual values for 2011-12	Actual values for 2012-13	Target value for 2013-14	Projected values for 2014-15	Projected values for 2015-16
1.	Improving productivity through management of genetic resources	Collection of trait specific genetic resources	Accessions added to field gene bank						
			Mango	No.	15	25	25	30	32
			Guava	No.	10	12	18	25	30
		Evaluation of germplasm	Germplasm evaluated for specific traits						
			Mango	No.	43	69	41	50	55
			Guava	No.	21	30	25	32	36
2.	Enhancing productivity and profitability through improved production, disease management quality planting materials and value addition	Development of cropping system	Compatible intercrops						
			Mango	No.	-	-	7	9	10
		Integrated management of shoulder browning disease	Treatment schedule						
			Mango	No.	-	-	4	2	3
		Evaluation of new insecticides molecules	Insecticides tested						
			Hopper	No.	1	-	4	7	9
			Mealybugs	No.	-	-	5	7	9
			Thrips	No.	1	-	5	9	12

		Evaluation of new fungicides molecules	Fungicides tested						
			Blossom Blight	No.	7	-	7	9	12
			Anthracnose	No.	2	-	4	5	7
			Powdery mildew	No.	-	-	4	5	9
		Development of PCR based disease diagnostic for detection of anthracnose of mango	Designing of primers	No.	-	-	13	20	25
		Production of planting materials of mango, aonla, bael and guava through conventional system	Quality planting materials of mango, aonla, bael and guava	No.	99189	123000	124200	154000	170000
		Value addition	Technologies/ products developed	No.	3	1	1	3	4
			Patents filed	No.	3	3	1	3	4
3.	Human resource development (HRD) and transfer of technology	Organization of training programmes	Trainings organized	No.	8	8	18	24	28
	Efficient Functioning of the 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		

Section 4 : Acronyms

S.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.	CISH	Central Institute for Subtropical Horticulture

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

SlNo.	Success indicator	Description	Definition	Measurement	General Comments
1.	Accessions added to field gene bank	Valuable 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 evaluated for specific traits	Germplasm collected and conserved would be rigorously evaluated for specific traits including colour, shelflife etc.	Germplasm evaluated for specific traits would be identified and subsequently incorporated and utilized for developing trait specific varieties	Number	Breeding efficiency enhancement
3.	Compatible intercrops	Intercrops would be evaluated in mango orchards.	Based on performance/ evaluation with respect to additional income in mango orchards, crops would be identified	Number	Most compatible crop (s) for enhanced factor productivity
4.	Treatment schedule	Insecticides/fungicides would be tested against shoulder browning in mango	Treatment schedule would be developed based on the data collected on disease incidence.	Number	Towards development of effective spray schedules
5.	Insecticides tested	Insecticides would be tested against the pests (hopper, mealybugs and thrips)	Treatment schedule would be developed based on the data collected on pest incidence.	Number	Towards development of effective spray schedules
6.	Fungicides tested	Fungicides would be tested against the disease (blossom blight, anthracnose and powdery mildew)	Treatment schedule would be developed based on the data collected on disease incidence.	Number	Towards development of effective spray schedules

7.	Designing of primers	Primers would be designed for development of disease diagnostic of *Colletotrichum gloeosporioide*s, the causal agent of anthracnose of mango.	Development of PCR based disease diagnostics for detection of anthracnose of mango	Number	Diagnostics
8.	Quality planting materials of mango, aonla, bael and guava	Varieties of mango and guava developed at the Institute and elite planting materials of aonla and bael would be multiplied through conventional methods.	Planting material would be made available to end users.	Number	Production of quality planting materials with traceability
9.	Technologies/ products developed	Development of different products from mandate crops.	New value added products from mandate crops would be developed	Number	Products diversification
10.	Patents filed	Ideas and technologies developed would be reflected in patents filed and usable technology and methodology developed	Development of innovations	Number	IPR harmonization
11.	Human resource development (HRD) and transfer of technology	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

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
NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL

Section 6: Outcome / Impact of activities of organization

S. N.	Outcome/ Impact of organization/RCs	Jointly responsible for influencing this outcome/impact with the following organization(s)/	Success Indicators	Unit	2011-12	2012-13	2013-14	2014-15	2015-16
1.	Central Institute for Subtropical Horticulture	Orchardists of respective crops / State Horticulture Department	• Increase in supply of quality planting materials of improved varieties of guava (cvs Lalit and Shweta) and yield increase (25-30 % approx.) with local/conventional varieties leading to an income about Rs. 220 million. • An increase of about 10000 ha area under high yielding varieties Bihar, M.P., Maharashtra, Rajasthan, U.P. and Uttarakhand.	No.	82345	100000	94500	115000	125000

Annual (April 1, 2013 to March 31, 2014) Performance Evaluation Report in respect of RFD 2013-2014 of CISH, Lucknow

Name of the Division: Horticulture

Name of the Institution: Central Institute for Subtropical Horticulture, Lucknow

RFD Nodal Officer: Dr. R.M.Khan

S. N.	Objectives	Weight	Actions	Success Indicators	Unit	Weight	Target / Criteria Value					Achievements	Performance		Percent achievements against Target values of 90% Col.	Reasons for shortfalls or excessive achievements, if applicable
							Excellent 100%	Very Good 90%	Good 80%	Fair 70%	Poor 60%		Raw Score	Weighted Score		
1.	Improving productivity through management of genetic resources	40	Collection of trait specific genetic resources	Accessions added to field gene bank												
				Mango	No.	10	28	25	22	20	17	**30**	**100**	**10**	**120**	While exploration additional trait specific germplasm was available to avoid additional visit more accessions were collected
				Guava	No.	10	20	18	16	14	12	**20**	**100**	**10**	**111.1**	
			Evaluation of germplasm	Germplasm evaluated for specific traits												
				Mango	No.	10	45	41	36	32	21	**51**	**100**	**10**	**124.4**	Several additional accessions came into fruiting during the year
				Guava	No.	10	28	25	22	20	17	**30**	**100**	**10**	**120**	
2.	Enhancing productivity and profitability	30	Development of cropping system	Compatible intercrops		5								**5**		
				Mango	No.		8	7	6	5	4	**13**	**100**		**185.7**	Due to total failure of six crops out of

	through improved production/protection technologies, production of quality planting materials with traceability and value addition														eight identified for the purpose, in-house review (IRC) was done and some more crops were suggested following intensive discussion.
			Integrated management of shoulder browning disease	Treatment schedule											
				Mango	No.		5	4	3	2	1	**5**	**100**		**125**	During the period of infestation based on the poor efficacy and farmer's feedback, new chemicals were added.
			Evaluation of new insecticides molecules	Insecticides tested		5								**5**	
				Hopper	No.		5	4	3	2	1	**7**	**100**		**175**
				Mealybug	No.		6	5	4	3	2	**11**	**100**		**220**
				Thrips	No.		6	5	4	3	2	**7**	**100**		**140**
			Evaluation of new fungicides molecules	Number fungicides tested		5								**5**	
				Blossom Blight	No.		8	7	6	5	2	**8**	**100**		**114**
				Anthracnose	No.		5	4	3	2	0	**9**	**100**		**225**
				Powdery mildew	No.		5	4	3	2	0	**5**	**100**		**125**
			Development of PCR based disease diagnostics for detection of anthracnose of mango	Designing of primers	No.	5	15	13	12	10	8	**15**	**100**	**5**	**115.4**	-
			Production of quality planting material of mango, aonla, bael and guava through conventional	Planting materials of mango, aonla, bael and guava produced	No.	5	138000	124200	110400	96600	82800	**138100**	**100**	**5**	**111.2**	-

			system													
			Value Addition	Technologies/ products developed	No.	5	3	2	1	0	0	**5**	**100**	**5**	**250**	Due to the demand of entrepreneurs'Technology for probiotic vegetable drink & pickle and aonla Prash were developed.
				Patents filed	No.		2	1	1	0	0	**2**	**100**		**200**	
3.	Transfer of technology, HRD and capacity building	19	Organization of training programmes	Trainings organized	No.	19	20	18	16	14	10	**29**	**100**	**19**	**161.1**	After setting the targets, new requests were received from various agencies for organizing the training programmes.
4.	Efficient Functioning of the 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	14.5.2013	**100**	**2**	100	-
			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	4.5.2013	**83**	**0.83**		
	Administrative Reforms	4	Implement ISO 9001 as per the approved action plan.	% Implementation	%	2	100	95	90	85	80	0	**0**	**0**		
			Prepare an action plan for	Ontime submission	Date	2	30/07 /2013	10/08/ 2013	20/08/ 2013	30/08/ 2013	10/09/ 2013	24.7.2013	**100**	**2**		

			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	100	**100**	**2**		
				Independent Audit of implementation of public grievance redressal system	%	2	100	95	90	85	80	100	**100**	**2**		

Total Composite Score: 97.83
Grade : Excellent

Procedure for computing the Weighted and Composite Score

1. **Weighted Score of a Success Indicator = Weight of the corresponding Success Indicator x Raw Score / 100**
2. **Total Composite Score = Sum of Weighted Scores of all the Success Indicators**