



RFD

Results - Framework Document

(2011-2012)

Central Institute for Cotton Research, Nagpur

CENTRAL INSTITUTE FOR COTTON RESEARCH, NAGPUR

Results- Framework Document (RFD) - April 2011 to March 2012

Section 1: Vision, Mission, Objectives and Functions

VISION

India emerging as a global leader in cotton production and productivity through leadership in science and technology

MISSION

To accelerate growth in national cotton productivity and minimizing agro-eco regional yield gaps through modern science and technologies by developing/providing technologies, products and services to different stakeholders (farmers, textile and processing industries, input agencies and other R&D organizations)

OBJECTIVES

1. To conduct research for discovering and developing new genetic material for enhancing yield, stress tolerance, input use efficiency and fibre quality of cotton.
2. To develop efficient, eco-friendly crop husbandry tools for improved cotton genotypes for diverse agro-ecologies

FUNCTIONS

- To address all aspects of cotton research and development including the national and international cotton research, technology evaluation and dissemination
- Fostering effective linkages and partnerships in relation to cotton research and development
- Coordination and documentation of scientific and technical information pertaining to cotton research and enhancement of human resource capabilities in cotton R&D

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

Objective	Weight	Action	Success Indicator	Unit	Weight	Target/ Criteria Value				
						Excellent	Very Good	Good	Fair	Poor
						100%	90%	80%	70%	60%
1. To conduct research for discovering and developing new genetic material for enhancing yield, stress tolerance, input use efficiency and fibre quality of cotton.	47	Augmentation, collection, characterization and utilization of cotton genetic resources	Germplasm accessions including perennials / land races added to cotton gene bank	number	3	62	56	50	45	40
			Germplasm accessions maintained	number	4	1100	1000	900	800	700
			Germplasm lines characterized through DUS	number	2	380	350	315	280	245
			Genotypes characterized through DNA finger printing	number	2	35	30	26	22	20
		Evaluation of cotton genetic resources/ improved varieties for suitable crop husbandry practices	Number of germplasm lines evaluated for adaptability and stress response	number	5	560	520	460	410	360
			Number of advance breeding material evaluated for adaptability and stress response	number	3	8	8	7	6	5
		Discovery of novel genes to combat stress and improve fibre quality / production	New genes discovered	number	4	7	5	4	3	2
			New transgenic events developed and registered with RCGM	number	6	9	8	7	6	5
			Molecular markers evaluated	number	3	12	10	9	8	7
			Molecular markers validated	number	1	2	1	0	0	0
			Lines developed through marker assisted breeding	number	1	2	1	0	0	0
		Development of improved varieties to suit diverse cotton production ecologies / situations	Advanced cultures developed	number	2	22	20	18	16	14
			Number of promising cultures sponsored for AICCIP	number	3	12	10	9	8	7

Objective	Weight	Action	Success Indicator	Unit	Weight	Target/ Criteria Value				
						Excellent	Very Good	Good	Fair	Poor
						100%	90%	80%	70%	60%
			Number of varieties released / proposals submitted	number	1	2	1	0	0	0
			Development / identification of novel / promising germplasm / genetic stock / breeding lines	Germplasm / genetic stock / breeding lines registered with NBPGR	number	2	6	5	4	3
		Production of nucleus / breeder 's seeds of cotton / formulations	Varieties / hybrids registered with PPV & FRA	number	1	2	1	0	0	0
			Quantity of nucleus seed produced	kg	2	12	10	9	8	7
			Quantity of breeder seed produced	kg	2	111	100	90	80	70
2. To develop efficient, eco-friendly crop husbandry tools for improved cotton genotypes for diverse agro-ecologies	42	Crop husbandry tools for improved cotton varieties / hybrids	Production technologies developed	number	5	4	3	2	1	0
			Implements designed / fabricated/ tested and validated	number	4	3	2	1	0	0
			Simulation/ stochastic / prediction / forecasting models	number	3	3	2	1	0	0
		Tools of suppression of stresses due to biotic and abiotic factors	Districts monitored for insect pest / disease infestation	number	6	40	38	34	30	24
			Districts monitored for insect resistance to insecticides and Bt toxins	number	6	40	38	34	30	24
			New crop protection technologies developed.	number	6	10	8	6	4	2
			Techniques to combat abiotic stresses, drought, water logging, salinity/ alkalinity / leaf reddening / high temperature etc.	number	4	8	7	6	5	4
		Products / processes disseminated, commercialized and patents filed	Technologies disseminated	number	4	7	6	5	4	2
			Products / processes commercialized	number	2	2	1	0	0	0

Objective	Weight	Action	Success Indicator	Unit	Weight	Target/ Criteria Value				
						Excellent	Very Good	Good	Fair	Poor
						100%	90%	80%	70%	60%
			Patents filed	number	2	2	1	0	0	0
*Efficient functioning of the RFD System	11	Timely submission of draft for approval	On-time submission	date	2	10/06/11	14/06/11	16/06/11	20/06/11	22/06/11
		Timely submission of results	On- time submission	date	1	01/05/12	03/05/12	04/05/12	05/05/12	06/05/12
		Finalize a strategic plan for RSC	Finalize the strategic plan for next five years	date	2	10/12/11	15/12/ 11	20/12/ 11	24/12/ 11	31/12/ 11
		Identify potential areas of corruption related to organization activities and develop an action plan to mitigate them	Finalize an action plan to mitigate potential areas of corruption	date	2	10/12/11	15/12/ 11	20/12/ 11	24/12/ 11	31/12/ 11
		Implementation of Sevottam	Create a Sevottam compliant system to implement, monitor and review Citizen's Charter	date	2	10/12/11	15/12/ 11	20/12/ 11	24/12/ 11	31/12/ 11
			Create a Sevottam compliant system to redress and monitor public grievances	date	2	10/12/11	15/12/ 11	20/12/ 11	24/12/ 11	31/12/ 11

Section 3: Trend Values of the Success Indicators

Objective	Weight	Action	Success Indicator	Unit	Target value 2011-12	Projected value				
						2012-13	2013-14	2014-15	2015-16	2016-17
1. To conduct research for discovering and developing new genetic material for enhancing yield, stress tolerance, input use efficiency and fibre quality.	47	Augmentation, collection, characterization and utilization of cotton genetic resources	Germplasm accessions including perennials / land races added to cotton gene bank	number	56	50	45	30	25	20
			Germplasm accessions maintained	number	1000	1500	2500	2000	1800	3000
			Germplasm lines characterized through DUS	number	350	100	150	140	150	100
			Genotypes characterized through DNA Finger Printing	number	30	40	40	45	45	50
		Evaluation of genetic resources/ improved varieties for suitable crop husbandry practices	Number of Germplasm lines evaluated for adaptability and stress response	number	520	250	260	270	280	290
			Number of advance breeding material evaluated for adaptability and stress response	number	8	160	160	170	180	190
		Discovery of novel genes to combat stress and improve fibre quality / production	New genes discovered	number	5	2	2	2	2	2
			New transgenic events developed and registered with RCGM	number	8	30	30	30	30	30
			Molecular markers evaluated	number	10	10	10	10	10	10
			Molecular markers validated	number	1	2	2	2	2	2
			Lines developed through marker assisted breeding	number	1	2	2	2	2	2
		Development of improved varieties to suit diverse cotton production ecologies / situations	Advanced cultures developed	number	20	20	20	20	20	20
			Number of promising cultures sponsored for AICCIP	number	10	12	12	12	12	12
			Number of varieties released / proposals submitted	number	1	0	1	1	1	1

Objective	Weight	Action	Success Indicator	Unit	Target value 2011-12	Projected value				
						2012-13	2013-14	2014-15	2015-16	2016-17
		Development / identification of novel / promising germplasm / genetic stock / breeding lines	Germplasm / genetic stock / breeding lines registered with NBPGR	number	5	5	3	3	3	3
			Varieties / hybrids registered with PPV & FRA	number	1	0	1	1	1	1
		Production of nucleus / breeder 's seeds / formulations	Quantity of nucleus seed produced	kg	10	50	50	50	50	50
			Quantity of breeder seed produced	kg	100	100	100	100	100	100
		2. To develop efficient, eco-friendly crop husbandry tools for the improved cotton genotypes for diverse agro-ecologies	42	Crop husbandry tools for improved cotton varieties / hybrids	Production technologies developed	number	3	4	4	4
Implements designed / fabricated/ tested and validated	number				2	3	2	2	2	2
Simulation/ stochastic / prediction / forecasting models	number				2	2	1	1	1	0
Tools of suppression of stresses due to biotic and abiotic factors	Districts monitored for insect pest / disease infestation			number	40	40	40	40	40	40
	Districts monitored for insect resistance to insecticides and Bt toxins			number	40	40	40	40	40	40
	New crop protection technologies developed.			number	10	5	5	5	5	5
	Techniques to combat abiotic stresses, drought, water logging, salinity/ alkalinity / leaf reddening / high temperature etc.			number	7	8	8	8	8	8
Products / processes disseminated, commercialized and patents filed	Technologies disseminated			number	6	4	3	3	3	3
	Products / processes commercialized			number	1	2	2	2	2	2
	Patents filed			number	1	1	1	1	1	0

Objective	Weight	Action	Success Indicator	Unit	Target value 2011-12	Projected value				
						2012-13	2013-14	2014-15	2015-16	2016-17
*Efficient functioning of the RFD System	11	Timely submission of draft for approval	On-time submission	date	10/06/11					
		Timely submission of results	On- time submission	date	01/05/12					
		Finalize a strategic plan for RSC	Finalize the strategic plan for next five years	date	10/12/11					
		Identify potential areas of corruption related to organization activities and develop an action plan to mitigate them	Finalize an action plan to mitigate potential areas of corruption	date	10/12/11					
		Implementation of Sevottam	Create a Sevottam compliant system to implement, monitor and review Citizen's Charter	date	10/12/11					
			Create a Sevottam compliant system to redress and monitor public grievances	date	10/12/11					

Section 4

Description and definition of success indicators and proposed measurement methodology

Objective 1: As a flagship programme, in order to enhance cotton productivity it is envisaged to source new genes for imparting biotic and abiotic stress resistance and improve fibre quality from diversified sources wherever genes are not available from the existing gene-pool. The number of new genes identified and number them integrated into cotton genome will be measured.

Objective 2: In order to improve the efficiency of natural resources viz. soil, solar radiation and rainfall as well as applied inputs viz. irrigation water and nutrients, innovative technologies like high density planting system for rainfed cotton, innovative crop narrations, efficient farm implements and precision farming systems are being attempted. These would improve resource efficiency and reduce cost of production besides providing resilience against climate induced productivity risks. Number of technologies generated, validated, disseminated will be the indicator of success.

Objective 3: With respect to conservation of genetic resources for sustainable use, it is envisaged to collect cotton genetic resources from diverse locations and conserve them in a repository. It is also important to evaluate and document them. This programme will support development of new varieties and hybrids to enhance productivity in different agro-eco regions. The genetic resources collected, characterized, documented and utilized for cotton improvement will be measured.

Objective 4: Development, validation and dissemination of integrated pest and disease management programme and monitoring and management insecticide resistance are important to reduce losses due to biotic factors, provide ecologically sustainable and cheaper alternate strategies and delay resistance development.

Objective 5: With respect to enhancing cotton productivity the main thrust is on development of varieties for high yield, diversified fibre quality to cater the needs of textile industry and impart biotic and abiotic stress tolerance. A complete expression of desirable morphological and economic traits undertaken in the Distinctness, Uniformity and Stability characterization of cotton varieties would facilitate registration under the new seed act. Quantity of breeder seed of varieties and parents of hybrids developed will indicate the demand of the varieties/hybrids.

Objective 6: To commercialize viable technologies/products and promote public-private partnership, it is envisaged to bring a change in the attitude of cotton researchers. Indicators for commercialization of technologies, promoting public private partnership, and protection of intellectual property rights will be determined by the commercialization through partnership development, including licensing of ICAR technologies. The emphasis will also be on bringing about equity among different partners, thereby contributing to larger adoption and improved socio-economic impact of the technologies. Trend in IPR protection is shown as cumulative number to appreciate its commercial value over the time.

Section 5

Specific Performance Requirements

The quantity of breeder seeds of varieties/parents of hybrids produced will be based on the indent from DAC for the same.

Section 6

Outcome/impact activities of organization ministry

Sr. No.	Outcome/Impact of Organization/RCs	Jointly responsible for influencing this outcome/impact with the following organization (s)/department/ministry	Success Indicator (s)	Unit	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
1	Developing and disseminating innovative and eco friendly products and technologies to improve the productivity and quality of cotton with reduced cost in order to make Indian cotton competitive in the global cotton market. To propagate novel crop production and pest management strategies and replace/reduce the use of hazardous pesticides and other agrochemicals with more eco friendly products. To empower farmers to sustain the growth in cotton productivity in wake of climatic uncertainties and volatile economic markets.	KVKs/SAUs/NGOs/DAC/State Govt.	Reduction in pesticide usage	%	25	24	22	20	20	20
		KVKs/SAUs/NGOs/DAC/State Govt.	Reduction in area under spurious/non descript Bt hybrids	%	5	4	3	3	3	2
		KVKs/SAUs/NGOs/DAC/State Govt.	Reduction in losses due to mealy bug through scientific management modules.	%	5	4	3	3	3	3
		KVKs/SAUs/NGOs/DAC/State Govt.	Curtailling the out break and spread of cotton leaf curl virus disease through surveillance, monitoring and advisory services.	%	5	4	4	3	3	3
		KVKs/SAUs/NGOs/DAC/State Govt.	Lower incidence and loss due to leaf reddening.	%	5	5	5	3	3	3
		KVKs/SAUs/NGOs/DAC/State Govt.	Enhancement in the production of cotton.	lakh bales	330	340	345	350	355	360