



Results-Framework Document (RFD)
for
Crop Science Division
(1st April, 2011- 31st March, 2012)

INDIAN COUNCIL OF AGRICULTURAL RESEARCH
KRISHI BHAWAN, NEW DELHI – 110 114

Section 1

Vision

Food security with nutritional support for human and animal population

Mission

Develop high yielding and nutritive crop cultivars (varieties/ hybrids) with high tolerance to various biotic and abiotic stresses

Objectives

- To strengthen frontier research in identified areas/ programs, adaptive research, technology assessment, and technology transfer to end users to bridge the gaps
- To plan organize and monitor research towards discoveries of genetic constellations that offer solutions for high yield, nutrition and tolerance to biotic and abiotic stresses and in field crop commodities
- To develop efficient, economic, eco-friendly and sustainable crop production and protection technologies, by harnessing conventional and modern scientific knowledge, tools, and cutting-edge of science for improved crop varieties/ hybrids and their seeds, suited to diverse agro-ecologies

Functions

- Research towards making available improved food and nutrition to human and live stocks, with the responsibility for conservation of natural resources and protection of agro-ecologies.
- Strengthening frontier research in identified areas/ programmes.
- Adaptive research, technology assessment, and technology transfer to end users to bridge the gaps.
- Technical support to sister departments of the Ministry of Agriculture, Ministry of Earth sciences, Ministry of Science and Technology, Department of Biotechnology, Directorate of Plant Protection Quarantine and Storage etc.

Section 2: Inter se Priorities among key Objectives, Success indicators and Targets

Objectives	Weight	Actions	Success Indicators	Unit	Weight	Target / Criteria value				
						Excellent 100 %	Very good 90 %	Good 80 %	Fair 70 %	Poor 60 %
1. To strengthen frontier research in identified areas/ programs, adaptive research, technology assessment, and technology transfer to end users to bridge the gap	35	Development of suitable projects/ programs, technologies and facilities there on	Number of projects/ programs, technologies and facilities there on	Number	10.0	5	4	3	2	1
		Establishment of Cooperative programs with All India Crop Improvement Program/ SAUs/ DST/ DBT/ DPPQ & S, DAC, NGOs and industries	Number of linkages and collaborative programs with national and international agencies	Number	10.0	5	4	3	2	1

		Validation and demonstration of technologies	Number of demonstrations/organized	Number	5.0	8	5	4	3	2
		Commercialization of technologies	Number of technologies commercialized	Number	10.0	5	4	3	2	1
2. To plan organize and monitor research towards discoveries of genetic constellations that offer solutions for high yield, nutrition and tolerance to biotic and abiotic stresses and in field crop commodities	34	Collection, characterization and conservation of genetic resource	Number of germplasm collected/characterized and conserved	Number	10.0	2200	2000	1800	1500	1000
		Evaluation of genetic resources/ improved varieties for suitable crop husbandry practices	Number of germplasm evaluated / Number of varieties released	Number	10.0	3,000	2,500	2,000	1,500	1,000
		Discovery of novel genes to combat stress and	Number of genes discovered and used to	Number	5.0	5	4	3	2	1

		improve quality/ production	improve quality/ production							
		Development of improved variety, suited to diverse agro ecologies	Number of varieties developed	Number	5.0	15	12	10	8	5
		Production of breeder's seed / formulations	Quantity of breeders seed produced	Weight (MT)	4.0	7500	7000	6000	5500	5000
3. To develop efficient, economic, eco-friendly and sustainable crop production and protection technologies, by harnessing conventional and modern scientific knowledge, tools, and cutting-edge of science for improved crop varieties/ hybrids and their seeds, suited to diverse agro-ecologies	20	Development of improved varieties through conventional and molecular approaches	Number of varieties	Number	15.0	15	12	10	8	5
		Biological control agents/ bio-fortification for enhancing productivity	Number of agents	Number	5.0	4	3	2	1	0

Mandatory Success Indicators

Objective	Actions	Success Indicator	Unit	Weight %	Excellent 100 %	Very good 90 %	Good 80 %	Fair 70 %	Poor 60 %
Efficient functioning of RFD System	Timely submission of RFD for 2011-12	On-time submission	Date	2	March 31 2011	April 3 2011	April 4 2011	April 5 2011	April 6 2011
	Timely submission of Results for 2011-12	On-time submission	Date	1	May 1 2012	May 3 2012	May 4 2012	May 5 2012	May 6 2012
	Finalize a Strategic Plan for RC	Finalize the Strategic Plan for next 5 years	Date	2	Dec 10 2011	Dec 15 2011	Dec 20 2011	Dec 24 2011	Dec 31 2011
	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	%	2	Dec 10 2011	Dec 15 2011	Dec 20 2011	Dec 24 2011	Dec 31 2011
	Implementation of Sevottam	Create a Sevottam compliant system to	Date	2	Dec 10 2011	Dec 15 2011	Dec 20 2011	Dec 24 2011	Dec 31 2011

		implement monitor and review Citizen's Charter							
		Create a Sevottam compliant system to redress and monitor public Grievance s	Date	2	Dec 10 2011	Dec 15 2011	Dec 20 2011	Dec 24 2011	Dec 31 2011
Total Weight				11 %					

Section 3: Trend Values of the Success Indicators

Objectives	Actions	Success Indicators	Unit	Target / Criteria value				
				Actual FY 09/10	Actual FY 10/11	Target FY 11/12	Projected FY 12/13	Projected FY 13/14
1. To strengthen frontier research in identified areas/ programs, adaptive research, technology assessment, and technology transfer to end users to bridge the gap	Development of suitable projects/ programs, technologies and facilities there on	Number of projects/ programs, technologies and facilities there on	Number	5	5	4	6	6
	Establishment of Cooperative programs with All India Crop Improvement Program/ SAUs/ DST/ DBT/ DPPQ & S, DAC, NGOs and industries	Number of linkages and collaborative programs with national and international agencies	Number	5	6	4	7	7
	Validation and demonstration of technologies	Number of demonstrations/ organized	Number	8	8	5	9	9

	Commercialization of technologies	Number of technologies commercialized	Number	5	5	4	6	7
2. To plan organize and monitor research towards discoveries of genetic constellations that offer solutions for high yield, nutrition and tolerance to biotic and abiotic stresses and in field crop commodities	Collection, characterization and conservation of genetic resource	Number of germplasm collected/ characterized and conserved	Number	2000	2000	2000	2200	2300
	Evaluation of genetic resources/ improved varieties for suitable crop husbandry practices	Number of germplasm evaluated / Number of varieties released	Number	2000	2000	2,500	2200	2400
	Discovery of novel genes to combat stress and improve quality/ production	Number of genes discovered and used to improve quality/ production	Number	5	5	4	6	7
	Development of improved variety, suited to diverse agro ecologies	Number of varieties developed	Number	10	10	12	12	12
	Production of breeder's seed / formulations	Quantity of breeders seed produced	Weight (MT)	7500	7500	7000	8000	8000

3. To develop efficient, economic, eco-friendly and sustainable crop production and protection technologies, by harnessing conventional and modern scientific knowledge, tools, and cutting- edge of science for improved crop varieties/ hybrids and their seeds, suited to diverse agro-ecologies	Development of improved varieties through conventional and molecular approaches, improved production / protection technologies	Number of technologies	Number	10	10	12	10	10
	Biological control agents/ bio-fortification for enhancing productivity	Number	Number	5	5	3	6	7

Section 4: Description and definition of success indicators and proposed measurement methodology

The emphasis on natural resource management is laid to ensure efficient use of natural resources under the changing situations. This can be supported by developing high yielding varieties, requiring less input like fertilizers, water and pesticides. With respect to conservation of genetic resources for sustainable use, it is envisaged to conserve plants, and microbe genetic resources to have repository, evaluation and further utilization of resources for improving yield in a sustainable manner. The high yielding production practices, management of resources, disease diagnostics/ management and value addition are success indicators for the Division.

With respect to initiation of new projects/ facilities/ institutions human resource development addressing emerging issues are important criteria and indicators of promoting research and education. Performance monitoring for high quality of produce/ seed/ resources/ students/ publications are indicators for the Crop Science Division.

Section 5: Specific performance requirement from other departments that are critical for delivering agreed results

The R&D support to face challenges is limited to seed and qualitative production technology that fit into defined agro-ecologies. However, it is a reality, as perceived through previous five year plans, that the support from sister departments to adequately dovetail the quality agro-input (including seed, agrochemicals, biological inputs etc.) service system has to be suitably garnered at both planning and execution level. This could be possible if their RFDs and Strategic Plans within the same ministry as well as between related departments of other ministries. Interdepartmental core committees for such purpose could benefit planning and execution process at implementation of research outcome in various states for agricultural production. Periodic apex discussion between Secretaries of all concerned departments is desirable to advise the government of the progress and problems in implementation of well-conceived programmes. The power of inter-departmental interaction would provide big push for successful and synchronous implementation of the ministry's flag-ship programmes. To achieve the objectives following interdepartmental issues are of importance:

1. Strengthening of agricultural universities will depend on their initiative / responsiveness, including the timely implementation of plans by the respective SAUs.
2. The quantity of breeder seed produced is based on the quantity indented by Department of Agriculture and Cooperation, which in turn collects indents from various seed agencies including State Departments of Agriculture.
3. Establishment of KVKs and strengthening of existing KVK shall depend upon timely availability of sufficient funds and other resources and cooperation from state departments and local bodies and a smooth implementation by the agencies managing KVKs.
4. Technology adoption would depend upon the proactive role of development departments namely DAC, DST, DBT, SAUs etc.

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 (ies)	Success indicator (s)	2009-10	2010-11	2011-12	2012-13	2013-14
1	Increase crop production and productivity towards nutrition and food security of citizens and animals	DAC and Departments of Agriculture of all states	Crop productivity through timely availability of high yielding, biotic/ abiotic stress tolerant certified seed	-	-	3 %	3 %	3 %
		DAC and Departments of Agriculture of all states	Crop productivity through timely availability of quality inputs such as biofertilizers, chemical fertilizers, biopesticides and chemical pesticides at village level at affordable price	-	-	5 %	5 %	5 %
2	Enhancement of farmers knowledge in improved crop production technologies with sustainable farming	DAC and Departments of Agriculture of all states	Reduction in knowledge gap on practices of modern crop production technologies	-	-	10 %	10 %	10 %