



# R F D

Results Framework Document  
for  
Directorate of Maize Research

(2011-2012)

## **Section 1:**

### **Vision, Mission, Objectives and Functions**

#### **Vision**

Rapid growth in the food, feed and industrial application of maize and maize-based products, for generation of wealth and employment in farming and industrial sectors, and for all those who are directly or indirectly associated with maize cultivation and utilization.

#### **Mission**

Enhancing the productivity, profitability and competitiveness of maize and maize based farming system with economic and environmental sustainability.

#### **Objectives**

- Genetic improvement and enhancement of germplasm for development of improved cultivars for increasing productivity and nutritional value of maize crop with economic and environmental sustainability through basic, strategic and applied research.
- Development and identification of appropriate varietal technologies for varied agro-climatic zones through multi-disciplinary and multi-location coordinated research .
- Development and dissemination of maize production and protection technologies.

#### **Functions**

- Collection, evaluation, maintenance and enhancement of germplasm
- Development of nutritionally improved single cross hybrids of normal and specialty corn
- Application of molecular tools in breeding program
- Coordination of multi-disciplinary and multi-location research to identify appropriate varietal technologies for varied agro-climatic zones
- Development of system based location specific production technologies
- To carry out research to reduce the biotic and abiotic stresses in maize
- Accelerating adoption of technologies through IT, training, FLDs, on farm research, etc.
- Development of national and international linkages with public and private organizations for collaborative research
- To provide consultancy service and undertake contractual research

<b>Section 2:</b>										
<b>Inter se Priorities among Key Objectives, Success indicators and Targets</b>										
<b>Objective</b>	<b>Weight</b>	<b>Action</b>	<b>Success Indicator</b>	<b>Unit</b>	<b>Weight</b>	<b>Target / Criteria Value</b>				
						<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Poor</b>
						<b>100%</b>	<b>90%</b>	<b>80%</b>	<b>70%</b>	<b>60%</b>
Genetic improvement and enhancement of germplasm for development of improved cultivars for increasing productivity and nutritional value of maize crop with economic and environmental sustainability through basic, strategic and applied research	36	Collection of maize accessions	Procurement of germplasm	No.	5	250	200	150	100	50
		Evaluation of maize germplasm	Promising inbred lines	No.	10	1300	1200	1100	1000	900
		Selection of germplasm lines for desirable traits	Specific traits inbred lines	No.	5	100	90	80	70	60
		Hybrid development of normal and specialty maize	Hybrids entered in coordinated trial	No.	13	5	4	3	2	1
		Use of molecular markers for maize improvement	Markers with utility in trait improvement	No.	3	1	0	0	0	0
Development and identification of appropriate varietal technologies for varied agro-climatic zones through multi-disciplinary and multi-location coordinated research	15	Constitution of multi-disciplinary and multi-location trials	Trials constituted	No.	6	65	60	50	45	40
		Monitoring and evaluation of trials	Centres monitored and evaluated	No.	3	28	25	23	21	19
		Compilation, analysis and preparation of report for coordinated trials	Report preparation	No.	6	4	3	2	1	0
Development and dissemination of maize production and protection technologies.	38	Experiments for management of biotic stresses.	Experiments conducted	No.	14	10	9	8	7	5

		Experiments for management of abiotic stresses	Experiments conducted	No.	3	2	1	0	0	0
		Training trainers and farmers	Trainings conducted	No.	4	6	5	4	3	1
		Organizing and monitoring of demonstrations	Demonstrations conducted and monitored	No.	4	100	75	50	25	0
		Organization of exhibitions	Exhibitions organized	No.	2	4	3	2	1	0
		Undertaking consultancy services/contractual research	Consultancy provided/Contractual research undertaken	No.	2	4	3	2	1	0
		Conservation agriculture and crop diversification in maize based cropping systems	Systems evaluated	No.	6	3	2	1	0	0
		Input and weed management	Experiments conducted	No.	3	4	3	2	1	0
Efficient Functioning of the RFD System	11	Timely submission of RFD for 2011-12	On-time submission	Date	2	June 10 2012	June 14 2012	June 16 2012	June 20 2012	June 22 2012
		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 10 2012
		Finalize a Strategic Plan for RC	Finalize the Strategic Plan for next 5 years	Date	2	Dec. 10 2012	Dec. 15 2012	Dec. 20 2012	Dec. 25 2012	Dec. 30 2012
		Identify potential areas of corruption related to organization activities and	Finalize an action plan to mitigate potential areas of corruption.	%	2	Dec. 10 2012	Dec. 15 2012	Dec. 20 2012	Dec. 25 2012	Dec. 30 2012

		develop an action plan to mitigate them								
		Implementation of Sevottam	Create a Sevottam compliant system to implement, monitor and review Citizen's Charter	Date	2	Dec. 10 2012	Dec. 15 2012	Dec. 20 2012	Dec. 25 2012	Dec. 30 2012
			Create a Sevottam Compliant system to redress and monitor public Grievances	Date	2	Dec. 10 2012	Dec. 15 2012	Dec. 20 2012	Dec. 25 2012	Dec. 30 2012

Section 3								
Trend values of Success Indicators								
Objective	Action	Success Indicator	Unit	Target / Criteria Value				
				Actual value for FY-09/10	Actual value for FY-10/11	Target value for FY-11/12	Projected value for FY-12/13	Projected value for FY-13/14
Enhancement of germplasm and development of improved cultivars for increasing productivity and nutritional value of maize crop with economic and environmental sustainability through basic, strategic and applied research	Collection of maize accessions	Procurement of germplasm	No.	228	635	250	275	275
	Evaluation of maize germplasm	Promising inbred lines	No.	1095	1561	1300	1350	1400
	Selection of germplasm lines for desirable traits	Specific traits inbred lines	No.	268	450	100	125	125
	Hybrid development of normal and specialty maize	Hybrids entered in coordinated trial	No.	0	0	5	6	6
	Use of molecular markers for maize improvement	Markers with utility in trait improvement	No.	0	0	1	1	1
Development and identification of appropriate varietal technologies for varied agro-climatic zones through multi-disciplinary and multi-location coordinated research	Constitution of multi-disciplinary and multi-location trials	Trials constituted	No.	63	66	65	66	66
	Monitoring and evaluation of trials	Centres monitored and evaluated	No.	25	27	28	28	28
	Compilation, analysis and preparation of report for coordinated trials	Report preparation	No.	4	4	4	4	4
Development and dissemination of maize production and protection technologies	Experiments for management of biotic stresses	Experiments conducted	No.	8	9	10	11	11
	Experiments for management of abiotic stresses	Experiments conducted	No.	2	2	2	2	2

	Training trainers and farmers	Trainings conducted	No.	5	5	6	7	7
	Organizing and monitoring of demonstrations	Demonstrations conducted and monitored	No.	100	100	100	100	100
	Organization of exhibitions	Exhibitions organized	No.	3	4	4	4	4
	Undertaking consultancy services/ contractual research	Consultancy provided/ Contractual research undertaken	No.	2	3	4	2	2
	Conservation agriculture and crop diversification in maize based cropping systems	Systems evaluated	No.	2	2	4	4	4
	Input and weed management	Experiments conducted	No.	2	3	4	4	4
Efficient Functioning of the RFD System	Timely submission of RFD for 2011-12	On-time submission	Date	NA	NA	June 5, 2012	NA	NA
	Timely submission of Results for 2011-12	On-time submission	Date	NA	NA	May 5, 2012	NA	NA
	Finalize a Strategic Plan for RC	Finalize the Strategic Plan for next 5 years	Date	NA	NA	Dec. 20 2012	Dec. 24 2013	Dec. 31 2014
	Identify potential areas of corruption related to organisation activities and develop an action plan to mitigate them	Finalize an action plan to mitigate potential areas of corruption.	%	NA	NA	Dec. 24, 2012	Dec. 24 2013	Dec. 31 2014
	Implementation of Sevottam	Create a Sevottam compliant system to implement, monitor and review Citizen's Charter	Date	NA	NA	Dec, 24 2012	Dec. 24 2013	Dec. 31 2014

		Create a Sevottam Compliant system to redress and monitor public Grievances	Date	NA	NA	Dec. 20 2012	Dec. 24 2013	Dec. 31 2014
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## Section 4:

### **Description and definition of success indicators and proposed measurement methodology**

Objective 1: *Genetic improvement and enhancement of germplasm for development of improved cultivars for increasing productivity and nutritional value of maize crop with economic and environmental sustainability through basic, strategic and applied research*

Genetic uniformity can lead to vulnerability to crop pathogens, insects and abiotic factors, thereby compromising food security. Breeding with exotic germplasm is done in order to introduce useful genetic diversity for minimizing risks to production, introducing unique traits, or improving trait performance. This is a long term process requiring coordinated effort and use of multiple, diverse testing environments to evaluate the materials for useful traits. The resulting germplasm derived by identification and incorporation of favourable traits from exotic sources is utilized in public breeding program and ultimately contribute to increased genetic diversity of maize. By reducing genetic vulnerability and providing genetic improvements that increase productivity or utilization for food, feed and industrial uses, the value of the crop to producers and end-users is enhanced and consumers ultimately benefit. This contributes to the food and nutritional security, sustainability of agriculture production and economic stability in the society. The success indicators are measured in terms of number of inbred lines developed, promotion of hybrids to coordinated evaluation trials which culminate into release of cultivars.

Objective 2: *Development and identification of appropriate varietal technologies for varied agro-climatic zones through multi-disciplinary and multi-location coordinated research*

There are five agro-climatic zones in our country. The purpose of multi-location evaluation of germplasm is to find out the most appropriate cultivar for different agro-climatic zones. The success indicators can be measured in terms of number of successful trials conducted.

Objective 3: *Development and dissemination of maize production and protection technologies*

The maize production technologies are developed to realize the optimal genetic potential of different cultivars and maximize the input use efficiency. Further, to prevent crop losses in field, protection technology is developed. These technologies are disseminated through field demonstrations, publications, exhibitions, training, *Krishi Vigyan Mela*, etc. The success indicators are measurable in terms of number of technologies developed, quantity of breeders seed produced, etc.

## **Section 5:**

### **Specific performance requirements from other agencies that are critical for delivering agreed results**

Proactive role of NBPGR, CIMMYT and other agencies in supplying germplasm will determine our performance. Active performance of the AICRP centres of SAUs/ICAR is must for carrying out of allotted coordinated trials and product development; technology dissemination through state department of agriculture and extension. Cooperation from farmers, seed production agencies like National Seed Corporation, State Seed Farm, etc. is required to meet the seed demand.

## **Section 6:**

### **Outcome/Impact of activities of organization**

The new high yielding cultivars with desirable traits in combination with maize production and protection technologies will contribute to the food and nutritional security, sustainability of agriculture production and economic stability in the society. The increased maize production will also contribute towards meeting the demand of poultry, industry and export. Further, contribute to meet the demand of specialty corn such as baby corn, sweet corn and pop corn.