



Results-Framework Document (RFD)  
for  
Directorate of Sorghum Research  
(2012-2013)

Address: Rajindernagar, 500 030 Hyderabad  
Website: [www.sorghum.res.in](http://www.sorghum.res.in)

Results Framework Document (RFD) for Directorate of Sorghum Research, Hyderabad  
(2012-2013)

Section 1:  
Vision, Mission, Objectives and Functions

## Vision

Enhancing competitiveness of sorghum through value addition to food, feed, fodder, and biofuel types of sorghum, and to enable nutritional security and economic prosperity of dryland farmers

## Mission

Develop technologies to enhance sorghum productivity, resource and input use efficiency and profitability of sorghum cultivation.

## Objectives

1. Enhancing sorghum production, productivity and quality
2. Identification of technologies suitable for different ecological and socio-economic environment
3. Validation and dissemination of technologies developed.
4. Value addition, entrepreneurship development (ED) and establishing business partnerships

## Functions

- To conduct basic and strategic research leading to technology development for increased productivity of sorghum, its diversified utilization, to promote profitability from sorghum based cropping systems and to serve as national repository of sorghum germplasm.
- To organize All-India multi-location, coordinated testing and identification of technologies for diverse sorghum ecologies.
- To coordinate breeder seed production of sorghum varieties and hybrid parental lines.
- To coordinate front-line demonstrations of proven varietal and production technologies.
- To disseminate knowledge and skills through formal training, informal out-reach activities and exploring ICT .

**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%
Enhancing sorghum production, productivity and quality	35	Collection / augmenting / evaluation / utilization & documentation of genetic resources	New germplasm collected & augmented	Number	4	70	60	50	40	30
			Sorghum genetic resources for varietal improvement for biotic and abiotic stresses distributed	Number	4	3500	3000	2500	2000	1500
		Development of parental lines/ varieties and superior hybrids with improved grain yield and quality	Superior experimental hybrids developed for higher protein digestibility and yield	Number	4	25	20	15	10	5
			Rabi sorghum parental lines for desired stover/ grain quality and improved yield evaluated	Number	5	50	40	30	25	20
			Parents with good combining ability for stalk yield and Brix content identified	Number	3	4	3	2	1	0
			Promising forage locals and sweet sorghum lines for forage purpose identified	Number	4	4	3	2	1	0
			Sorghum lines evaluated to identify sources with improved tolerance to biotic & abiotic stresses	Number	5	250	200	150	125	100
			Improvement of sorghum through biotechnological tools	RILs for sorghum foliar disease resistance developed	Number	3	150	100	90	80
		QTL introgression progenies for shoot fly resistance developed		Number	3	25	20	18	15	10

Objective	Weight	Action	Success indicator	Unit	Weight	Target/ Criteria value				
						Excellent	Very Good	Good	Fair	Poor
						100%	90%	80%	70%	60%
Identification of technologies suitable for different ecological and socio-economic environment	20	Organization of All-India coordinated trials in different disciplines	Report preparation and presentation	Date	8	April 30 2012	May 2 2012	May 3 2012	May 4 2012	May 5 2012
			Promising entries promoted for further testing in advance trials	No.	7	7	5	4	3	2
			Release proposals of promising varieties submitted to VIC	No.	5	3	2	1	0	0
Validation and dissemination of technologies developed.	18	Organization of FLDs	Coordination, monitoring, data collection and preparation of all the FLDs conducted	No.	4	250	200	175	150	125
		Organization of Breeder seed production	Multilocational breeder seed production for varieties & parental lines	Tonnes	5	25	15	10	8	5
		Research Publication	Research publications in national/ international journals, books, book chapters, bulletins etc.	No.	4	20	15	10	8	5
			Publication of Annual Report	Date	5	June30, 2012	July 10, 2012	July 15, 2012	July 20, 2012	July 25, 2012
Value addition, Entrepreneurship development (ED) and establishing business partnerships	15	Value addition through processing technologies on ready-to-eat /cook foods	Number of products standardized	No.	5	2	1	0	0	0
		ED on processing technologies and strengthen the business partnerships with food industry in PPP mode	Number of participants benefitted	No.	7	400	300	250	200	150
			MoU or business plan formats	No.	3	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%
Efficient functioning of RFD system	3	Timely submission of RFD for 2012-13	On-time submission	Date	2	Mar. 23 2012	Mar. 26 2012	Mar. 27 2012	Mar. 28 2012	Mar. 29 2012
		Timely submission of Results for 2012-13	On-time submission	Date	1	May 1 2013	May 2 2013	May 3 2013	May 6 2013	May 7 2013
Administrative Reforms	5	Implement ISO 9001	Prepare ISO 9001 action plan	Date	1	June 4, 2012	June 5, 2012	June 6, 2012	June 7, 2012	June 8, 2012
			Implementation of ISO 9001 action plan	Date	2	March 25, 2013	March 26, 2013	March 27, 2013	March 28, 2013	March 29, 2013
		Implement mitigating strategies for reducing potential risk of corruption	% of implementation	%	2	100	95	90	85	80
Improving Internal Efficiency / responsiveness / service delivery of Institute	4	Implementation of Sevottam	Create a Sevottam compliant system to implement, monitor and review Citizen's Charter	%	2	100	95	90	85	80
			Create a Sevottam compliant system to redress and monitor public grievances	%	2	100	95	90	85	80

Section 3:

Trend Values of the Success Indicators

Objective	Action	Success indicator	Unit	Actual Value FY 10-11	Actual Value FY 11-12	Target value FY12-13	Projected value FY 13-14	Projected value FY 14-15
1. Enhancing sorghum production, productivity and quality	Collection / augmenting /	New germplasm collected & augmented.	Number	30	35	60	65	70
	Evaluation / utilization & documentation of genetic resources	Sorghum genetic resources for varietal improvement for biotic and abiotic stresses distributed.	Number	2000	2500	3000	3100	3200
	Development of parental lines/varieties and superior hybrids with improved grain yield and quality	Superior experimental hybrids developed for higher protein digestibility and yield	Number	15	18	20	22	25
		Rabi sorghum parental lines for desired stover/grain quality and improved yield evaluated	Number	35	38	40	44	45
		Parents with good combing ability for stalk yield and Brix content evaluated	Number	-	2	3	4	5
		Promising forage locals and sweet sorghum lines for forage purpose identified	Number	-	2	3	4	5
		Sorghum lines evaluated to identify sources with improved tolerance to biotic & abiotic stresses	Number	130	190	200	225	250
	Improvement of sorghum through biotechnological tools	RILs for sorghum foliar disease resistance developed	Number	-	80	100	150	200
		QTL introgression progenies for shoot fly resistance developed	Number	-	18	20	30	40

Objective	Action	Success indicator	Unit	Actual Value FY 10-11	Actual Value FY 11-12	Target value FY12-13	Projected value FY 13-14	Projected value FY 14-15
2. Identification of technologies suitable for different ecological and socioeconomic environment	Organization of All-India coordinated trials in different disciplines	Report preparation and presentation	Date	April 20, 2010	April 10 2011	May 10 2012	May 10 2013	May 10 2014
		Promising entries promoted for further testing in advance trials	Number	5	5	5	8	10
		Release proposals of promising varieties submitted to VIC	Number	2	2	2	3	4
3. Validation, and dissemination of technologies developed .	Organization of FLDs	Coordination, monitoring, data collection and preparation of all the FLDs conducted	Number	150	190	200	225	250
	Organization of Breeder seed production	Multilocational breeder seed production for varieties & parental lines	tonnes	15	18	15	22	25
	Research Publication	Research publication in national/ international journal, books, book chapter, bulletins etc	Number	12	14	15	20	25
		Publication of Annual Report	Date	May, 30 2011	June20, 2011	July 10, 2012	June, 20 2013	June, 20 2014
4. Value addition, Entrepreneurship development (ED) and establishing business partnerships	Value addition through processing technologies on ready-to-eat/cook foods ED on processing technologies and strengthen the business partnerships with food industry in PPP mode	Number of products standardized	Number	2	2	1	2	3
		Number of participants benefitted	Number	250	275	300	350	400
		MoU or business plan formats	No.	-	2	1	4	5

Objective	Action	Success indicator	Unit	Actual Value FY 10-11	Actual Value FY 11-12	Target value FY12-13	Projected value FY 13-14	Projected value FY 14-15
Efficient functioning of RFD system	Timely submission of RFD for 2012-13	On-time submission	Date	March 16 2011	June 10, 2011	Mar. 26 2012		
	Timely submission of Results for 2012-13	On-time submission	Date	March 31 2011	April 30, 2012	May 2 2013		
Administrative Reforms	Implement ISO 9001	Prepare ISO 9001 action plan	Date	-	-	June 5 2012		
		Implementation of ISO 9001 action plan	Date	-	-	March 26 2013		
	Implement mitigating strategies for reducing potential risk of corruption	% of implementation	%	-		95		
Improving Internal Efficiency / responsiveness / service delivery of Institute	Implementation of Sevottam	Create a Sevottam compliant system to implement, monitor and review Citizen's Charter	%	-		95		
		Create a Sevottam compliant system to redress and monitor public grievances	%	-		95		



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

Objective 1: With respect to enhancing sorghum production, productivity and quality, the major focus will include the collection of new germplasm from hot spots, evaluations for DUS traits, develop superior hybrids in yield and quality, to intensify research to develop genotypes with desirable seed traits and postflowering drought tolerance in rabi sorghum. Research on sweet sorghum will be targeting to identify the genotypes with high brix and stalk yield. Forage sorghum research will be aimed at identifying good combiners for fodder yield and quality. Research efforts will be focused on to identify the improved sources of tolerance to shoot fly, stem borers, shoot bug and other insect pests. In additions studies will be conducted to understand the mechanisms of shoot-fly and stem borer resistance. On disease management front, major focus will be on grain mold management. Research on integrated nutrient and water management will be targeting to improve nutrient and water-use efficiency; and identify the suitable genotypes for new niche areas like sorghum in rice fallows. Biotechnological tools will be used to augment the research for improving biotic and abiotic stress tolerance

Objective 2: Identification of technologies suitable for different ecological and socio-economic environment through the AICSIP network on Sorghum aims at rapid identification of varietal and other Sorghum production technologies and facilitates rapid dissemination of seeds of promising varieties. The network caters to all the sorghum ecologies, and socio-economic environment of the sorghum farmers.

Objective 3: With respect to validation and dissemination of technologies developed, it is aimed to take proven technologies to the farmers door step and layout frontline demonstrations, undertake massive breeder seed production for newly developed sorghum varieties and parental lines of the sorghum hybrids developed under public sector. Research publications in national/international journal, books, book chapter, bulletins etc will be targeting to disseminate and share the new knowledge with the scientific world and other stakeholders in the area of sorghum improvement

Objective 4: Our activities on value addition, entrepreneurship development and establishing business partnerships will be targeting value addition through processing technologies on ready-to-eat/cook foods, popularization of product specific cultivars in farmers fields, entrepreneurship development on processing technologies and business partnerships with food industry in PPP mode

## Section 5: Specific Performance Requirements from other Departments

Conduct of Frontline Demonstrations is in collaboration and cooperation of the Department of Agriculture and Cooperation.

Breeder seed production is taken up at the behest of indents received from DAC, and seed will be produced by our cooperators.

**Section 6:  
Outcome/impact of Department/Ministry**

<b>Outcome/ impact of Department / ministry</b>	<b>Jointly responsible for influencing this outcome / impact with the following departments</b>	<b>Success indicator</b>	<b>Unit</b>	<b>FY 10-11</b>	<b>FY 11-12</b>	<b>FY 12-13</b>	<b>FY 13-14</b>	<b>FY 14-15</b>
Enhanced Sorghum production	SAUs, AICSIP centers	Identification of improved technologies	Number	-	2	2	3	4
Enhanced availability of quality human resources for agricultural research & development activities	SAUs, ICAR	Capacity building	Number	-	2	2	3	4
Enhanced rural livelihood security	SAUs, state governments	Release of high yielding / improved varieties/hybrids	Number	-	1	1	2	3
Improved nutritional security	SAUs, ICMR	Popularizations of sorghum based products	Number	-	1	2	3	4
Enhanced Frontier research / programmes in sorghum R & D		Technical papers published in recognized journals	Number	-	12	15	20	25
Commercialization of Sorghum based technologies	SAUs, ICMR, State governments	Research converted in commercialized technologies	Number	-	1	1	2	3