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INDIAN COUNCIL OF
AGRICULTURAL RESEARCH

DISTRICT WISE CONTINGENCY PLAN TO DEAL WITH **EL NIÑO**

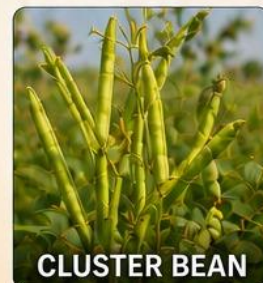
PREPAREDNESS | RESPONSE | RESILIENCE



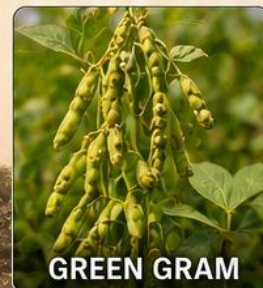
**BUILDING A
DROUGHT RESILIENT
RAJASTHAN**



BAJRA



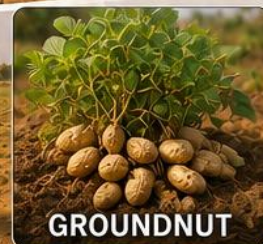
CLUSTER BEAN



GREEN GRAM



SOYBEAN



GROUNDNUT



EARLY WARNING
& MONITORING



WATER
MANAGEMENT



SUSTAINABLE
AGRICULTURE



COMMUNITY
PARTICIPATION

TOGETHER, LET'S BUILD A RESILIENT RAJASTHAN

PREPARE TODAY • PROTECT TOMORROW • PROSPER TOGETHER

Rajasthan

Rajasthan is India's largest state by geographical area and is characterized by an arid to semi-arid climate. Agriculture is the primary source of livelihood for nearly two-thirds of the state's rural population despite frequent droughts, erratic rainfall, and water scarcity. Most agriculture is rainfed, particularly in western Rajasthan, making the sector highly vulnerable to climatic variability. The state contributes significantly to the production of coarse cereals, pulses, oilseeds, spices, and livestock products. The eastern and southeastern regions are relatively more productive due to better rainfall and irrigation facilities, whereas the western districts largely depend on monsoon rains and groundwater.

Rajasthan has diverse agro-climatic zones ranging from the hot arid western plains to the humid southeastern plateau. Major Kharif crops include pearl millet (bajra), maize, sorghum, cluster bean (guar), moth bean, moong bean, black gram, groundnut, sesame, cotton, and soybean (in southeastern districts). The major Rabi crops are wheat, mustard, barley, chickpea, cumin, coriander, fenugreek, and Isabgol. Rajasthan receives an average annual rainfall of 250–700 mm, with nearly 85–90% occurring during the southwest monsoon (June–September). Therefore, agricultural production depends heavily on the timely onset and distribution of monsoon rainfall.

Historical Impact of El Niño on Rajasthan

Rajasthan has historically been one of the state's most severely affected by El Niño, as it frequently experiences below-normal monsoon rainfall during El Niño years. This results in delayed sowing, prolonged dry spells, severe soil moisture stress, and recurring droughts, particularly in the rainfed western and central regions. Major Kharif crops such as pearl millet, guar, groundnut, cotton, and pulses often suffer significant yield losses, while fodder shortages and declining groundwater levels further impact livestock and rural livelihoods.

Effects on Major Crops

- Pearl Millet (Bajra): Poor germination, reduced tillering, and low grain yield.
- Cluster Bean (Guar): Reduced branching, flower drop, and poor pod formation.
- Groundnut: Poor peg formation, reduced pod development, and low kernel yield.
- Sesame: Moisture stress reduces capsule formation and seed filling.
- Cotton: Delayed sowing, flower shedding, reduced boll formation, and moisture stress.

- Maize: Poor cob development and reduced grain filling.
- Soybean: Poor germination, flower shedding, and reduced pod setting.
- Moong and Moth Bean: Flower drop, poor pod formation, and reduced productivity.
- Mustard: Delayed sowing due to inadequate residual soil moisture.
- Wheat: Poor germination and reduced tillering under moisture deficit.

Contingency Plans for Major Crops Grown in Rajasthan

Crop	El Niño Situation	Recommended Contingency Measures
Pearl Millet (Bajra)	Delayed monsoon	Early sowing after rainfall, drought-tolerant hybrids, moisture conservation
Cluster Bean (Guar)	Rainfall deficit	Early sowing, thinning, moisture conservation, intercropping
Groundnut	Delayed monsoon	Short-duration varieties, ridge-furrow planting, mulching
Sesame	Failure of groundnut sowing	Use as contingency crop, line sowing, seed treatment
Cotton	Delayed sowing	Short-duration hybrids, protective irrigation, mulching
Maize	Late sowing	Early-maturing hybrids, ridge sowing, foliar nutrition
Soybean	Delayed monsoon	Short-duration varieties, seed treatment, line sowing
Moong Bean	Dry spells	Early maturing varieties, foliar spray of 2% urea
Moth Bean	Severe drought	Drought-resilient crop, moisture conservation
Mustard	Poor residual soil moisture	Early sowing, limited irrigation at flowering

Agriculture in Rajasthan is highly dependent on the southwest monsoon and is therefore extremely vulnerable to El Niño-induced droughts. Delayed monsoon onset, prolonged dry spells, and below-normal rainfall significantly affect crop productivity, fodder availability, and farm incomes. Strengthening district-level contingency plans, promoting drought-resilient crop varieties, efficient water management, rainwater harvesting, micro-irrigation, and climate-smart agricultural practices are essential to enhance the resilience and sustainability of Rajasthan's agricultural sector

Area under major crops

Crop	Area (Lakh ha)
Bajra	43.82
Cluster Bean	29.83
Green gram	23.67
Soybean	10.79
Groundnut	10.55

Districts vulnerable to El Nino

High	Medium	Low
Churu, Jaisalmer	Jodhpur, Barmer, Nagaur, Pali, Bikaner, Jaipur, Sikar	Dungarpur, Jalor, Dausa, Banswara, Udaipur, Jhunjhunun, Sirohi, Tonk, Sawai Madhopur, Alwar, Dhaulpur, Pratapgarh, Karauli, Bundi, Jhalawar, Bharatpur, Baran

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	ALWAR
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	545.9	More than 19%	Less than 442.179
June	67.8		
July	185.5		
August	185.7		
September	106.9		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	217450	Gross irrigated area:	251204
Net Rainfed area	22513	Gross rainfed area	179032

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	-	-
Wells	217450	251204
Tanks	-	-
Other sources	-	-

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	12	12	0
2	Jowar	13753	38	13715
3	Maize	619	31	588
4	Bajra	147149	985	146164
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	4		4
2	Groundnut	20	4	16
3	Sesamum	533	5	528
4	Soyabean	-		
5	Sunflower	-		
6	Castor	-		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	22314	22222	92
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	1	1	0
2	Tobacco	3	2	1
3	Guar seed	198		2061
4	Other Fodder crops	3070	1009	2061

Crop Plan- Beginning of the season

Rainfed situation

Condition	Suggested Contingency Measures				
Delay by 4 weeks July 3 rd week	Sandy to sandy loam	Bajra/Guar/Til/Mustard/Wheat/Barley/Gram	Bajra -HHB-67(Improved), HHB-94, ICMH-356, RHB-173, RHB-177, ICTP-8203 Guar -RGC-1003, RGC-1017, RGC-1002, RGC-1066 Til - RT-351, RT-346, RT-46, RT-125, RT-127	Prepare seed nursery of bajra & transplant in July end. Intercropping of Bajra: Paired 2 rows of Bajra at 30cm & only row of moong/guar	Seed drill under RKVY, supply of seed through RSSC, NSC, Bio-fertilizers, plain water harvesting structures for regular fodder supply planting of Ardu, subabul, etc. at farmer & village level. Desilting of ponds to increase their capacity.

Contingency measures- Mid season

Condition	Suggested Contingency Measures				
Midseason Drought (long dry spell, consecutive 2 weeks rainless (>2.5mm) period)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient& Moisture conservation measures	Remarks on Implementation
At vegetative stage	Sandy to sandy loam	Bajra/Guar/Til/Mustard/Wheat/Barley/Gram	Lifesaving irrigation, thinning, weeding. Spraying of thiourea in bajra, guar etc.		Supply of Intercultural implements

Condition	Suggested Contingency Measures				
Midseason Drought (long dry spell)	Major Farming situation	Normal Crop/ cropping system	Crop management	Soil nutrient& Moisture conservation measures	Remarks on Implementation
At flowering/ Fruiting stage	Sandy to sandy loam	Bajra/Guar/Til/Mustard/ Wheat/Barley/Gram	Life sowing irrigation, spray of 0.1%thiourea+ 0.2%, FeSO ₄ 0.5%, K ₂ SO ₄ / KCI + 1% urea	Mulching	Supply of Intercultural implements through RKVY

Contingency measures- End of the season

Condition	Suggested Contingency Measures				
Terminal drought (Early withdrawal of monsoon)	Major Farming situation	Normal Crop/cropping system	Crop management	Rabi Crop planning	Remarks on Implementation
	Sandy to sandy loam	Bajra/Guar/Til/Mustard/ Wheat/Barley/Gram	Lifesaving irrigation, Harvest the crop for fodder purpose. Weed free field	Harvested field: Prepare the field followed by soil planking to conserve moisture for rabi rainfed crops	Supply of Intercultural implements through RKVY

Resource Management Technologies

- Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during *kharif* and *rabi* seasons
- Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during *kharif* and *rabi*
- Farm ponds for lifesaving irrigation to high value *rabi* crops
- Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
- Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
- Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
- Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
- Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
- Application of tank silt for increasing the moisture holding capacity and fertility of the soil

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	BANSWARA
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	886	More than 19%	Less than 717.66
June	101.2		
July	289.4		
August	309.8		
September	185.6		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	160382	Gross irrigated area:	161045
Net Rainfed area	67234	Gross rainfed area	225534

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	87974	87997
Wells	39220	39464
Tanks	4946	4946
Other sources	28242	28638

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	24837	0	
2	Jowar	57	-	
3	Maize	124028	17877	106151
4	Bajra	46		46
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	2513		2513
2	Groundnut	382		382
3	Sesamum	120		120
4	Soyabean	68171		68171
5	Sunflower	-		
6	Castor	34		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	13974	154	13820
2	Jute	-		

3	Mesta	-		
4	Sunhemp	21		21

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	35	6	29
2	Tobacco	-		
3	Guar seed	4		229
4	Other Fodder crops	735	506	229

Crop Plan- Beginning of the season

Rainfed situation

Condition			Suggested Contingency Measures		
Early season drought (delayed onset)	Major farming situation	Crop/ cropping system	Change in crop/cropping system	Agronomic measures	Remarks on implementation
Delay by 4 weeks (3 rd week of July)	Red loam hilly shallow soils	Maize/Urd/Soy bean	Urd/Moong/Til Or Maize for green cobs/short duration varieties Urd: T-9, Barkha, PU-31 Moong: K-851, RMG-62, Pusa Vishal, SML-668 Sesame: RT-46, RT-125, Maize for fodder: African Tall	• Increase seed rate by 10-15% of pulses and sesame • Chemical weed control may be preferred	• Seed of short duration varieties must be ensured through NSC, RSSC and other seed sources • Availability of Breeder Seed from University
	Black heavy to medium deep loam/clayey soils	Soybean/Maize /Cotton	Soybean/Urd/ Moong/Til/ Or Maize for Fodder: African Tall Soybean: JS93-05 Urd: T-9, Barkha, PU-31 Moong: K-851, RMG-62, Pusa Vishal, SML-668 Til: RT-46, RT-125	• Increase seed rate by 10-15% of Pulses and sesame - Chemical weed control may be preferred	Seed of short duration varieties must be ensured through NSC, RSSC and other seed sources

	Black heavy to medium deep loam/clayey soils (Low lying areas)	Transplanted Rice Or Black gram/Cluster Bean/ Sesame	Urd//Til/Cluster bean Or Maize for green cobs/Fodder (African Tall) Urd: T-9, Barkha, PU-31 Moong: K-851, RMG-62, Pusa Vishal,	• Increase seed rate by 10-15% of Pulses and sesame • Chemical weed control may be preferred • Transplanted Rice to be maintained on SRI	Seed of short duration varieties must be ensured through NSC, RSSC and other seed sources
			SML-668 Seasame: RT-46, RT-125, ClusterBean: RGC-936, RGC-1017 Transplanted Rice		
	Red loamy shallow hilly eroded soils (sloppy situation)	Maize+pigeonp ea/ urd intercropping	Maize Fodder: African Tall Urd: T-9, Barkha, PU-31 Pigeonpea: ICPL-87, BDN-2	• Increase seed rate by 10-15% of Pulses and sesame • Chemical weed control may be preferred	Seed of short duration varieties must be ensured through NSC, RSSC and other seed sources Appropriate Seed drill for intercropping through RKVY

Contingency measures- Mid season

Condition			Suggested Contingency Measures		
Mid-season drought (long dry spell, consecutive 2 weeks rainless (>2.5mm period))	Major farming situation	Normal Crops & cropping system	Crop Management	Soil nutrient & moisture conservation measures	Remarks on implementation
	Red loam hilly shallow soils	Maize/Urd/ Soybean	1. Clean cultivation through repeated light intercultural operations 2. Mulching (green leaf)/in-situ mulching by removing alternate rows in maize 3. Remove susceptible crop for fodder and retain hardy crop among the crop mixtures 4. Use of anti-transparent /removing lower leaves in maize 5. Tying of ridges of 6-8 intervals for conserving rain water	• Earthing in maize at 30-35 DAS and spray of 2% urea in 800-1000 lit water • Foliar spraying of nutrients • Mulching	

			6. Remove alternate rows 7. Lifesaving irrigation		
At vegetative stage (30-40 DAS)	Black heavy to medium deep loam/clayey soils	Soybean/Maize/Cotton	1. Clean cultivation through repeated light intercultural operations 2. In-situ mulching by weeds 3. Remove susceptible crop for fodder and retain hardy crop among the crop mixtures	• Earthing in cotton at 30-35 DAS & spray of 2% urea in 800-1000 lit water • Foliar spraying of nutrients • Mulching	

Condition			Suggested Contingency Measures		
Mid-season drought (long dry spell)	Major farming situation	Crop/cropping system	Crop Management	Soil nutrient & moisture conservation measures	Remarks on implementation
At reproductive stage (45-55 DAS)	Red loam hilly shallow soils	Maize/Urd/Soybean	1. Lifesaving irrigation if possible 2. Maize should be harvested for baby corn if market is available 3. Removal of lower leaves in maize for fodder 4. In situ mulching of weeds	Rain water harvesting and its re-use for crop saving 2% urea spray in 800-1000 lit water Thio urea @ 500 ppm spray Use of anti-transpirants	
	Black heavy to medium deep loam/clayey soils	Soybean/Maize/Cotton	1. Lifesaving irrigation if possible 2. In situ mulching of weeds	Rain water harvesting and its re-use for crop saving 2% urea spray in 800-1000 lit water Thio urea @ 500 ppm spray Use of anti-transpirants	
	Black heavy to medium deep loam/clayey soils (Low lying areas)	Upland Rice/Maize Transplanted Rice	1. Lifesaving irrigation if possible 2. Maintain sub saturated to saturated condition for transplanted rice to avoid soil cracks 3. In situ mulching of weeds	Rain water harvesting and its re-use for crop saving 2% urea spray in 800-1000 lit water Thio urea @ 500 ppm spray Use of anti-transpirants	

	Red loamy eroded hilly shallow soils (sloppy situation)	Maize+pigeonpea/ urd intercropping or cotton + maize intercropping	1.Lifesaving irrigation if possible 2.Maize should be harvested for baby corn if market is available 3.Removal of lower leaves in maize/ removal of alternate rows in maize for fodder 4.In situ mulching of weeds	2% urea spray in 800-1000 lit water Thio urea @ 500 ppm spray Use of anti-transpirants	
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Contingency measures- End of the season

Condition			Suggested Contingency Measures		
Terminal drought	Major farming situation	Crop/cropping system	Crop Management	Rabi Crop Planning	Remarks on implementation
(Beyond 60-70 DAS)	Red loam hilly shallow soils	Maize/Urd/ Soybean	1.Spray of 2% urea spray in 800-1000-liter water and can be repeated after 7 days 2. Removal of lower levels for fodder in maize 3. Lifesaving irrigation if available 4. Harvesting at physiological maturity stage 5. Thio urea spray @ 500 ppm 6. Anti-transpirants 7. Termite management	Rain water must be harvested in season and can be used during terminal drought on deficit irrigation principles.	Early harvesting of kharif crops. Sowing of early varieties of mustard or toria before rabi sowing if rains.
	Black heavy to medium deep loam/clayey soils	Soybean/Maize/ Cotton	1.Spray of 2% urea spray in 800-1000 liter water 2. Lifesaving irrigation if available 3. Harvesting at physiological maturity stage 4. Thio urea spray @ 500 ppm	Rain water must be harvested in season and can be used during terminal drought on deficit irrigation principles.	Early harvesting of kharif crops and preparing for catch crops.

	Black heavy to medium deep loam/clayey soils (Low lying areas)	Upland Rice/Maize Transplanted Rice	1. Spray of 2% urea spray in 800-1000 liter water 2. Lifesaving irrigation if available 3. Harvesting at physiological maturity stage 4. Thio urea spray @ 500 ppm	1. Rain water must be harvested in season and can be used during terminal drought. Transplanted paddy must be kept on saturated soil conditions to avoid soil cracks.	Early harvesting of kharif crops. Sowing of early varieties of mustard or toria before rabi sowing if rains.
	Red loamy eroded hilly shallow soils (sloppy situation)	Maize + pigeonpea/ urd intercropping or cotton + maize intercropping	1. Spray of 2% urea spray in 800-1000 liter water 2. Removal of lower levels for fodder in maize 3. Harvesting at physiological maturity stage 4. Removal of susceptible crop for fodder from crop mixtures. 5. Thio urea spray @ 500 ppm 6. Termite Management	-	-

Drought-Irrigated situation

Condition		Suggested Contingency measures			
Delayed /limited release of	Major farming situation	Crop/cropping system	Change in Crop / Cropping system	Agronomic measures	Remarks on implementation

water in canals due to low rainfall	Canal/Lift Irrigated areas- Fine texture red loan to deep clay soils having high rain fall (>800 mm)	Maize- Wheat/Gram/Mustard/B arley-S.Moong Rice-Wheat-S.Moong Soybean-Wheat	Wheat and rabi maize area shifted to Toria/ barley/mustard/gram and multicut fodder crops. Toria: Bhawani, Sangam Mustard: Pusa Agarni Gram: Pratap Chana- 1, Dahod Yellow, Barley: RD-2052, RD-2035, RD-2508	1. Proper basal dose will increase WUE 2. 25% increase in seed rate. 3. Seed treatment with Azoto. & PSB & cultures 4. Furrow irrigation/check basin method 5. Inter cropping gram + barley or barley + mustard/toria 6. Thiourea spray @ 500 ppm at reproductive phase. 7. Grow durum wheat 8. Grow late sown wheat varieties 9. Short duration varieties eg. Pratap chana-1 10. Apply irrigation at critical growth stages Pulses: Gram-flowering & pod development Wheat-CRI & flower	Harvested rain water can be used for sowing
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	Coarse to medium texture moderately deep undulated hilly situation having average rain fall (600-800 mm)	Maize- Wheat/Gram/Mustard/B arley-S.Moong Rice-Wheat-S.Moong Soybean-Wheat	Toria: Bhawani, Sangam Mustard: Pusa Agarni Gram: Pratap Chana- 1, Dahod Yellow: Barley: RD-2052, RD-2035, RD-2508	1. Proper basal dose will increase WUE 2. 25% increase in seed rate. 3. Seed treatment with Azoto. & PSB & cultures 4. Furrow irrigation/check basin method 5. Inter cropping gram + barley or barley + mustard/toria 6. Thiourea spray @ 500 ppm at reproductive phase. 7. Grow durum wheat 8. Grow late sown wheat varieties 9. Short duration varieties eg. Pratap chana-1 10. Apply irrigation at critical growth stages Pulses: Gram-flowering & pod development Wheat-CRI & flower	Harvested rain water can be used for sowing
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Condition		Suggested Contingency			
Limited release of water in canals due to low rainfall	Major farming situation	Crop/cropping system	Change in Crop / Cropping system	Agronomic measures	Remarks on implementation

	Canal/Lift Irrigated areas- Fine texture red loan to deep clay soils having high rain fall (>800 mm)	Maize- Wheat/Gram/Mustard/Barley- S.Moong Rice-Wheat-S.Moong Soybean-Wheat	Toria, Mustard, Lin seed, Barley for fodder & safflower instead of rabi maize/wheat Mustard:Laxmi, Pusa Agarani Toria : Bhavani, Sangam Barley: RD- 2052, RD- 2035, RD-2508	1. Sowing with conserved soil moisture in time+ Short duration varieties of gram 2. Furrow irrigation/skip furrow irrigation 3. Use of proper basal dose of fertilizers 4. Inter cropping gram + barley or barley + mustard/toria 5. Thiourea spray @ 500 ppm at reproductive phase. 6. Apply irrigation at critical growth stages 7. Use sprinkler & drip irrigation method	Harvested rain water can be used for sowing
	Coarse to medium texture moderately deep undulated hilly situation having average rain fall (600-800 mm)	Maize- Wheat/Gram/Mustard/Barley- S.Moong Rice-Wheat-S.Moong Soybean-Wheat	Toria, Mustard, Lin seed, Barley for fodder & safflower instead of rabi maize/wheat Mustard:Laxmi, Pusa Agarani Toria : Bhavani, Sangam Barley: RD-2052, RD- 2035, RD-2508	1. Sowing with conserved soil moisture in time+ Short duration varieties of gram 2. Furrow irrigation/skip furrow irrigation 3. Use of proper basal dose of fertilizers 4. Inter cropping gram + barley or barley + mustard/toria 5. Thiourea spray @ 500 ppm at reproductive phase. 6. Apply irrigation at critical growth stages 7. Use sprinkler & drip	Harvested rain water can be used for sowing

Conditio			Suggested Contingency		
			Change in Crop / Croppin	Agronomic measures	Remarks on implementation
Non-release of water in canals under delayed onset of monsoon in catchment	Major farming situation	Crop/cropping system			
	Canal/Lift Irrigated areas- Fine texture red loam to deep clay soils having high rain fall (>800 mm)	Maize- Wheat/Gram/Mustard/Barley- S.Moong Rice-Wheat-S.Moong Soybean-Wheat	Toria, Mustard, Lin seed, Barley for fodder & safflower instead of rabi maize/wheat Mustard:Laxmi, Pusa Agarani Toria : Bhavani, Sangam Barley: RD-2052, RD-2035, RD-2508	1. Sowing on conserved soil moisture in time with short duration varieties of gram 2. Furrow irrigation/skipped furrow irrigation 3. Use of proper basal dose of fertilizers 4. Inter cropping gram + barley or barley + mustard/toria 5. Thiourea spray @ 500 ppm at reproductive phase. 6. Apply irrigation at critical growth stages 7. Use sprinkler & drip irrigation	

	Coarse to medium texture moderately deep undulated hilly situation having average rain fall (600-800 mm)	Maize-Wheat/Gram/Mustard/Barley-S.Moong Rice-Wheat-S.Moong Soybean-Wheat	Toria, Mustard, Lin seed, Barley for fodder & safflower instead of rabi maize/wheat Mustard:Laxmi, Pusa Agarani Toria : Bhavani, Sangam Barley: RD-2052, RD-2035, RD-2508	1. Sowing on conserved soil moisture in time with short duration varieties of gram 2. Furrow irrigation/skip furrow irrigation 3. Use of proper basal dose of fertilizers 4. Inter cropping gram + barley or barley + mustard/toria 5. Thiourea spray @ 500 ppm at reproductive phase. 6. Apply irrigation at critical growth stages 7. Use sprinkler & drip irrigation method	
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Condition			Suggested Contingency measures		
Lack of inflows into tanks due to insufficient / delayed onset of monsoon	Major farming	Crop/cropping system	Change in Crop /	Agronomic measures	Remarks on implementation
	Tank bed farming situation Fine texture red loam to deep clay soils having high rain fall (>800 mm)	Maize-Wheat/Gram/Mustard/Barley-S.Moong Rice-Wheat-S.Moong Soybean-Wheat	Gram, Barley/toria, Linseed, Safflower	1. Proper basal dose 2. Seed treatment with Azoto., PSB + Rhizo. 3. Life saving irrigation from tank through skip furrow irrigation 4. Crop mixtures. 5. Sprinkler & drip irrigation method 6. Apply irrigation at critical growth	

	Tank bed farming situation moderately deep undulated hilly situation having average rain fall (600-800	Maize-Wheat/Gram/Mustard/Barley-S.Moong Rice-Wheat-S.Moong Soybean-Wheat	Gram, Barley/toria, Linseed, Safflower	1. Proper basal dose 2. Seed treatment with Azoto., PSB + Rhizo. 3. Life saving irrigation from tank through skip furrow irrigation 4. Crop mixtures. 5. Sprinkler & drip irrigation method	
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Condition			Suggested Contingency measures		
Insufficient groundwater recharge due to low rainfall	Major farming sit	Crop/cropping system	Change in Crop / Cropping	Agronomic measures	Remarks on implementation
	Lift irrigated/Well irrigated	1. Maize/urd-Wheat/gram/Mustard/Barley-S.Moong 2. Rice-Wheat/gram 3. Rice-S.Moong 4. Soybean-wheat 5. Cotton-Wheat	Rabi crops of low water requirement mustard, toria, barley, gram, lin seed etc may be cultivated instead of wheat & rabi maize Drought tolerant varieties of different crops.	1. Proper basal dose of fertilizer through placement 2. Seed treatment & use high seed rate. 3. Adopt deficit irrigation of skip row irrigation methods. 4. Crop mixtures (Barley + Mustard) (Gram + Barley) 5. Improved method of micro irrigation. Eg. Sprinkler & drip irrigation method	
	Lift irrigated/Well irrigated	1. Maize/urd-Wheat/gram/Mustard/Barley-S.Moong 2. Rice-Wheat/gram 3. Rice-S.Moong 4. Soybean-wheat 5. Cotton-Wheat 6. Urd/maize-rabi maize	Rabi crops of low water requirement mustard, toria, barley, gram, lin seed etc may be cultivated instead of wheat & rabi maize Drought tolerant varieties of different crops.	Proper basal dose of fertilizer through placement Seed treatment & use high seed rate. Adopt deficit irrigation of skip row irrigation methods. Crop mixtures (Barley + Mustard) (Gram + Barley) Improved method of micro irrigation. Eg. Sprinkler & drip irrigation method Deep sowing Irrigation at critical stages	

Any other condition(specify)					
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Resource Management Technologies

- Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during *kharif* and *rabi* seasons
- Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during *kharif* and *rabi*
- Farm ponds for lifesaving irrigation to high value *rabi* crops
- Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
- Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
- Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
- Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
- Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
- Application of tank silt for increasing the moisture holding capacity and fertility of the soil

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	BARAN
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	832	More than 19%	Less than 673.92
June	101.7		
July	299.4		
August	288.7		
September	142.2		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	336531	Gross irrigated area:	369368
Net Rainfed area	10234	Gross rainfed area	295674

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	57694	61299
Wells	264889	293268
Tanks	791	820
Other sources	13157	13981

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	33783	31339	2444
2	Jowar	86	-	
3	Maize	42432	6	42426
4	Bajra	516		516
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	6		6
2	Groundnut	469	3	466
3	Sesamum	626		626
4	Soyabean	234698	652	234046
5	Sunflower	-		
6	Castor	-		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	-		
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	1	1	0
2	Tobacco	-		
3	Guar seed	6		75
4	Other Fodder crops	226	151	75

Crop Plan- Beginning of the season

Rainfed situation

Condition			Suggested Contingency Measures		
Early season drought (delayed onset)	Major Farming situation ^a	Normal Crop/cropping system ^b	Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Delay by 4 weeks (July 4 th week)	Deep black clayey	Soybean (JS 335, JS 93-05, JS 95-60, Pratap Soya-1, Pratap soya-2	Soybean (JS 93-05, Pratap Soya-1, Pratap Soya-2, JS 95-60) or Urdbean (T-9, PU-19, KU-96-3) or Sesamum (TC-25, RT-46, RT-123, RT-125)	Use of 10-15% higher seed rate in soybean	Supply of seed through RSSC/NSC/ other agency Construction of Farm pond through NREGA, RKVY
		Urdbean (Krishna, T-9, PU-19, KU 96-3)	Urdbean (Krishna, T-9, PU-19, KU 96-3)	-	
		Mungbean K 851, ML 267	Mungbean K 851, ML 267	-	
		Sesamum (TC25, Pratap, RT-103, RT 46, RT 123, RT 125)	Sesamum (TC-25, RT-103, RT 46, RT 123, RT 125)	-	
	Deep brown loamy	Soybean (JS 335, JS 93-05, JS 95-60, Pratap Soya-1, Pratap soya-2	Soybean (JS 93-05, Pratap Soya-1, Pratap Soya-2, JS 95-60) or Urdbean (T-9, PU-19, KU-96-3) or Sesamum (TC-25, RT-46, RT-123, RT-125)	Use of 10-15% higher seed rate in soybean	
		Urdbean (Krishna, T-9, PU-19, KU 96-3)	Urdbean (Krishna, T-9, PU-19, KU 96-3)	-	
		Mungbean K 851, ML 267	Mungbean K 851, ML 267	-	
		Sesamum (TC25, Pratap, RT-103, RT 46, RT 123, RT 125)	Sesamum (TC-25, RT-103, RT 46, RT 123, RT 125)	-	

Contingency measures- Mid season

Condition			Suggested Contingency Measures		
Mid-season drought (long dry spell, consecutive 2 weeks)	Major Farming situation ^a	Normal Crop/ cropping system ^b	Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e

rainless (>2.5 mm) period)					
At vegetative stage	Deep black clayey	Soybean	Lifesaving Irrigation Thinning of plants by 30 to 50% Weeding & hoeing	Mulching in the crop rows Use of anti-transpirants like kaolin Spray 2% urea after the relief of dry spell	Crop insurance Availability of inter-culture implements can be procured from RKVY
		Maize	• Lifesaving Irrigation • Thinning of plants by 30 to 50% • Weeding & hoeing	• Use of green mulch in the rows • Spray of 2% urea after relief of dry spell • Use of anti-transpirants like kaolin	
		Urdbean/ Mungbean	• Weeding & hoeing	• Use of anti-transparent like kaolin. • Spray of 2% urea after relief of dry spell • Mulching in crop rows	
		Sesamum	• Weeding & hoeing	• Use of anti-transpirants like kaolin • Spray of 2% urea after relief of dry spell • Use of green mulch in the rows	
	Deep brown loamy	Soybean	• Lifesaving Irrigation • Thinning of plants by 30 to 50% • Weeding & hoeing	• Mulching in crop rows • Spray of 2% urea after relief of dry spell • Use of anti-transpirants like kaolin	
		Maize	• Lifesaving Irrigation • Thinning of plants by 30 to 50% • Weeding & hoeing	• Use of green material as mulch • Spray of 2% urea • Use of anti-transpirants like kaolin	
		Urdbean/ Mungbean	• Weeding & hoeing	• Use of anti-transparent like kaolin	
		Sesamum	• Weeding & hoeing	• Use of anti-transpirants like kaolin	

Condition			Suggested Contingency Measures		
Mid-season drought (long dry spell)	Major Farming situation ^a	Normal Crop/ cropping system ^b	Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
At flowering/ fruiting stage	Deep black clayey	Soybean		• Spray of 0.1% thio urea • Lifesaving Irrigation from farm pond water • Alternate furrow irrigation	Link watersheds and NREGS for the support of farm pond technology
		Maize	Removal of lower leaves for fodder Harvest cobs for table purpose (if market is available) and for green fodder Harvesting of green cobs and green fodder	• Spray of 0.1% thio urea • Lifesaving Irrigation by the harvested rainwater • Alternate furrow irrigation	
		Urdbean/ Mungbean		• Spray of 2% urea • Lifesaving Irrigation by the harvested rainwater	
		Sesamum		• Lifesaving Irrigation by the harvested rainwater • Alternate furrow irrigation	
	Deep brown loamy	Soybean		• Spray of 0.1% thio urea • Lifesaving Irrigation from farm pond • Alternate furrow irrigation	
		Maize	• Removal of lower leaves for fodder • Harvest cobs for table purpose (if market is available) and for green fodder • Harvesting of green cobs and green fodder	• Spray of 0.1% thio urea • Lifesaving Irrigation by the harvested rainwater • Furrow irrigation	
		Urdbean/ Mungbean		• Spray of 2.0% urea • Lifesaving Irrigation by the harvested rainwater	

		Sesamum		Lifesaving Irrigation by the harvested rainwater	
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Contingency measures- End of the season

Condition			Suggested Contingency Measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Rabi Crop planning ^d	Remarks on Implementation ^e
	Deep black clayey	Soybean	- Life-saving Irrigation - If the damage will be severe, harvest for fodder	Plan for land preparation of rabi crops like chickpea, Mustard/taramira	Link watersheds and NREGS for the support of Farm pond technology
		Maize	- Life-saving Irrigation from rain water harvesting - Removal of lower leaves for fodder - Harvesting of green cobs and green fodder	Plan for land preparation of rabi crops like chickpea/ lentil/ mustard/ Taramira	
		Urdbean/ Mungbean	Life-saving irrigation from rainwater harvesting	-do-	
		Sesamum	Life-saving irrigation from rainwater harvesting	-do-	
	Deep brown loamy	Soybean	Life-saving Irrigation from rainwater harvesting	-do-	
		Maize	- Life-saving Irrigation by the harvested rainwater - Removal of lower leaves for fodder - Harvesting of green cobs and green fodder	-do-	
		Urdbean/ Mungbean	Life-saving irrigation from rainwater harvesting	-do-	
		Sesamum	-do-	-do-	

Drought - Irrigated situation

Condition	Suggested Contingency measures				
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Delayed release of water in canals due to low rainfall	Deep black clayey	Soybean/Maize-wheat	Soybean/Maize – wheat/ barley/gram/ coriander / linseed Wheat : Raj 3077, HI 8498, Raj 3765, Raj 4037, Raj 3777, HI 1531, LoK-1 Coriander : RCr-20, 436, 480, 684, CS-6 Gram : C-235, Dahod yellow, Pratap chana – 1, GNG 469, GNG 683, KAK 2 Barley: RD-2552, RD-2052 Linseed : Pratap Alsi-1, RL-914, Meera, Kiran	- Upcoming irrigation from farm pond water for sowing of crops - Irrigation by pressurized irrigation system If feasible or furrow method - Irrigation at critical crop growth stages	Link watershed programmes for the support of farm pond technology
		Paddy-wheat	Paddy-Wheat Wheat: Raj-3777, Lok-1, Raj-3765	- Upcoming irrigation from farm pond water for sowing of crops - Upcoming irrigation from farm pond water for sowing of crops - Sprinkler or drip or Furrow irrigation - Use of Roto till drill for sowing	
	Deep brown loamy	Soybean/Maize-wheat	Soybean/Maize – wheat/ barley/gram/ coriander / linseed Wheat : Raj 3077, HI 8498, Raj 3765, Raj 4037, Raj 3777, HI 1531, LoK-1 Coriander : RCr-20, 436, 480, 684, CS-6 Gram : C-235, Dahod yellow, Pratap chana – 1, GNG 469, GNG 683, KAK 2 Barley: RD-2552, RD-2052 Linseed : Pratap Alsi-1, RL-914, Meera, Kiran	- Irrigation by sprinkler or drip or Alternate furrow - Upcoming irrigation from farm pond water for sowing of crops - Irrigation at critical crop growth stages	
		Paddy-wheat	Paddy-Wheat Wheat: Raj-3777, Lok-1, Raj-3765	- Irrigation by Sprinkler/drip system if feasible or furrow method - Use of Roto till drill for sowing	

Condition	Suggested Contingency measures				
	Major Farming situation ^f	Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Non release of water in canals under delayed onset of monsoon in catchment	Deep black clayey	Soybean/Maize-Wheat/Gram Or Fallow-Mustard	Soybean/Maize-Gram/ Coriander/ Or Fallow-Mustard/Gram/ Coriander	• Irrigation by sprinkler/dripsystem if feasible • Soil stirring for dust mulch • Weed removal • Use of anti transparent i.e. Kaolin • Spray of urea at 2-3% as per recommendation • Spray of thio urea 0.1%	Construction of Rain water harvesting structures with the support of watershed programmes and NREGS
	Deep brown loamy	Soybean/Maize-Wheat/Gram Or Fallow-Mustard	Soybean/Maize-Gram/ Coriander/ Or Fallow-Mustard/Gram/ Coriander	• Irrigation by Sprinkler or drip if water is available from other sources • Soil stirring for dust mulch • Weed removal • Use of anti transparent i.e. Kaolin • Spray of urea at 2-3% as per recommendation • Spray of thio urea 0.1%	

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	Deep black clayey	No Sowing and water is used for drinking of Animals and other domestic use	If adequate moisture is available for germination sowing of crops i.e. mustard, Gram, Lentil, Taramira, Safflower in Tank beds	• Soil stirring for dust mulch • Weed removal • Spray of urea @ 2-3% as per recommendation • Spray of thio urea 0.1%	Deepening of Tanks under NREGA if tanks are kept fallow
	Deep brown loamy	No Sowing and water is used for drinking of Animals and other domestic use	If adequate moisture is available for germination sowing of crops i.e. mustard, Gram, Lentil, Taramira, Safflower in Tank beds	• Soil stirring for dust mulch • Weed removal • Spray of urea @ 2-3% as per recommendation • Spray of thio urea 0.1%	

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Insufficient groundwater recharge due to low rainfall	Deep black clayey	Soybean/Maize-Wheat	Soybean/Maize-Gram/Coriander/Linseed/Lentil/Mustard/Durum Wheat	• Irrigation by sprinkler or drip system If feasible • Conjunctive use of surface rainwater with ground water • Irrigation at critical growth stages with water saving technologies • Soil stirring for dust mulch • Timely weed removal • Spray of Thiourea 0.1%	• Link watersheds,NREGA for the support of farm pond technology

Resource Management Technologies

- Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during *kharif* and *rabi* seasons
- Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during *kharif* and *rabi*
- Farm ponds for lifesaving irrigation to high value *rabi* crops
- Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
- Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
- Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
- Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
- Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
- Application of tank silt for increasing the moisture holding capacity and fertility of the soil

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	BARMER
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	272.7	More than 19%	Less than 220.887
June	33.7		
July	96.5		
August	93.6		
September	48.9		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	324285	Gross irrigated area:	495903
Net Rainfed area	845996	Gross rainfed area	1003304

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	22190	25866
Wells	301543	469485
Tanks	-	-
Other sources	552	552

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	0	0	
2	Jowar	-	-	
3	Maize	0		
4	Bajra	672594	34808	637786
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	-		
2	Groundnut	3025	2968	57
3	Sesamum	1340	30	1310
4	Soyabean	-		
5	Sunflower	-		
6	Castor	40683		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	43	43	0
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	-		
2	Tobacco	-		
3	Guar seed	262335		0
4	Other Fodder crops	1157	1157	0

Crop Plan- Beginning of the season

Rainfed situation

Condition			Suggested Contingency Measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system including variety	Agronomic measures	Remarks on Implementation
Delay by 4 weeks (1 st week of August)	Sand Dunes with undulating inter-dunal spaces/ Deep sandy plain / plain / Course to fine textured hard pan (Low rainfall)	Pearl millet	No change Prefer extra early hybrids viz. HHB 67, ICMH 356 GHB 358 Or moth bean + guar intercropping	Reduce 25% acreage Sowing at a 60 cm and use press wheel	Link NSC, RSSC, SAU, RKVY for good quality seed and press wheel device
		Sesame	No change Prefer varieties like RT 127 & RT 346	Use certified seed	
		Moth bean	No change Prefer varieties like RMO 40 & RMO 257	- seed priming with 0.05% thiourea and - Increase seed rate of by 10-15%	
		Moong bean	Moth bean and guar	-do-	
		Cluster bean	No change Prefer var. like RGC 936, RGC 1003 & RGM 112	-do-	

Contingency measures- Mid season

Condition			Suggested Contingency Measures		
Mid-season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
At vegetative stage	Sand Dunes with undulating inter-dunal spaces/ Deep sandy plain / Coarse to fine textured hard pan (Low rainfall)	Pearl millet	Remove 25% within row	Dust mulch with weeder Vegetative mulch either with any organic material in crop rows	Link MGNREGA, NHM, RKVY, NFSM, ISOPOM, Watersheds, NERGS for support of water harvesting technology and to provide subsidy for thiourea

				Life-saving irrigation with water in farm pond/ harvesting structure (Alternate furrow irrigation) Avoid top dressing of urea during the dry spell	
		Sesame	Spray of Urea (2%) after relief of dry spell	-do--	
		Moth bean	Spray of thiourea at 500 ppm	-do-	
		Moong bean	-do-	-do-	
		Cluster bean	-do-	-do-	
Condition			Suggested Contingency Measures		
Mid-season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Reproductive stage	Sand Dunes with undulating inter-dunal spaces/ Deep sandy plain / Coarse to fine textured hard pan (Low rainfall)	Pearl millet	Spray of thiourea 500 ppm	Life-saving irrigation-	Link MGNREGA, NHM, RKVY, NFSM, ISOPOM, Watersheds, NERGS for support of water harvesting technology and to provide subsidy for the urea
		Sesame	-do-	-do--	
		Moth bean	-do-	-do--	
		Moong bean	-do-	-do--	
		Cluster bean	-do-	-do-	

Contingency measures- End of the season

Condition			Suggested Contingency Measures		
Terminal drought	Major Farming situation	Normal Crop/cropping system	Crop management	Rabi Crop planning measures	Remarks on Implementation
(Early withdrawal of monsoon)	Sand Dunes with undulating inter-dunal spaces/ Deep sandy plain / Coarse to fine textured hard pan (Low rainfall)	Pearl millet	Life-saving irrigation Harvest for fodder if damage will be very severe	Sowing of Barley using poor quality water in Luni basin	Link watersheds, NREGS for the support of farm pond/water harvesting structure technology
		Sesame	-do-	-	
		Moth bean	-do-	-	
		Moong bean	-do-	-	
		Cluster bean	-do-	-	

Irrigated situation

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed release of water in canals due to low rainfall	Not applicable				

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Limited release of water in canals due to low rainfall	Not applicable				

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non release of water in canals under delayed onset of monsoon in catchment	Not applicable				

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	Not applicable				

Condition			Suggested Contingency measures		
	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Insufficient groundwater recharge due to low rainfall	Sand Dunes with undulating inter-dunal spaces/ Deep sandy plain / Coarse to fine textured hard pan	Groundnut,	Reduce area under groundnut cotton, castor and chillies as per availability of irrigation water	Use low water requiring cultivars Irrigation at critical crop growth stages Conjunctive use of ground water with rainwater Alternate furrow irrigation Use sprinkler or drip irrigation system	- Use certified seed of from NSC, RSSC SAU - Provide subsidy for MIS
		castor	Cluster bean/ castor	-do-	
		cotton	Castor/ground nut	-do-	

Condition			Suggested Contingency measures		
	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
		chilli	Reduce the area of chillies and allocate more area under castor	-do-	
		Wheat, mustard,	Wheat	Prefer early maturing and drought resistant var. of wheat (Raj 3765, Raj 3077, Raj 3777 Micro irrigation systems like sprinkler if feasible Alternate furrow irrigation	
		Mustard	Mustard	Prefer early maturing and drought resistant var. of mustard (Bio 902). Micro irrigation systems like sprinkler if feasible Alternate furrow irrigation	
		cumin	Cumin(RZ 209) or Taramira (RTM 314))or Isabgol (RI 1	Micro irrigation systems like sprinkler if feasible Alternate furrow irrigation	

Resource Management Technologies

- Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during *kharif* and *rabi* seasons
- Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during *kharif* and *rabi*
- Farm ponds for lifesaving irrigation to high value *rabi* crops
- Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
- Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
- Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
- Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
- Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
- Application of tank silt for increasing the moisture holding capacity and fertility of the soil

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	BHARATPUR
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	543.3	More than 19%	Less than 440.073
June	64.6		
July	181.4		
August	184.1		
September	113.2		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	203027	Gross irrigated area:	204092
Net Rainfed area	7930	Gross rainfed area	140670

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	1122	1231
Wells	201710	202666
Tanks	-	-
Other sources	195	195

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	232	114	118
2	Jowar	3296	3	3293
3	Maize	2		2
4	Bajra	115199	27	115172
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	-		
2	Groundnut	7		7
3	Sesamum	555		555
4	Soyabean	-		
5	Sunflower	-		
6	Castor	-		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	67	21	46
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	-		
2	Tobacco	-		
3	Guar seed	543		15193
4	Other Fodder crops	15924	731	15193

Crop Plan- Beginning of the season

Rainfed situation

Condition			Suggested Contingency Measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system (short duration)	Agronomic measures	Remarks on Implementation
Delay by 4 weeks (Specify month) July 3 rd week	Rainfed Medium brown loamy soil (high rain)	Bajra/Guar/Til/Mustard /Wheat/Barley/Gram	Bajra -HHB-67, HHB-94, RHB-173ICMH-356, RHB-177, HHB-60 Guar -RGC-1003, RGC-1017, RGC-1002, RGC-936, RGC-1066, HG 2-20	Prepare seed nursery of bajra & transplant in July end. Intercropping of Bajra: Paired 2 rows of Bajra at 30cm & only row of moong/guar.	Seed drill under RKVY, supply of seed through RSSC, NSC, Bio-fertilizers, plain water harvesting structures, for
	Rainfed Deep brown loamy soil (medium rain)		Til -RT-346, RT-351, MT-75, RT-125, RT-127		Regular fodder Supply planting of Ardu, subabul, etc. at farmer & village level. Desilting of Ponds to increase their capacity.

Contingency measures- Mid season

Condition			Suggested Contingency Measures		
Midseason Drought (long dry spell, consecutive 2 weeks rainless (>2.5mm) period)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & Moisture conservation measures	Remarks on Implementation
At vegetative stage	Rainfed Medium brown loamy soil (high rain)	Bajra/Guar/Til/Mustard, /Wheat/Barley/Gram	Life-saving irrigation, Thinning, weeding. Spraying of Thiourea in bajra, guar, etc.		Supply of Interculture implements through RKVY.
	Rainfed				

	Deep brown loamy soil (medium rain)				
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Condition			Suggested Contingency Measures		
Mid-season drought (long dry spell)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
At flowering/ Fruiting stage	Rainfed Medium brown loamy soil (high rain)	Bajra/Guar/Til/Mustard /Wheat/Barley/Gram	Life -saving irrigation, spray of 0.1% thiourea+ 0.2%, FeSO ₄ 0.5%, K ₂ SO ₄ / KCl+ 1%urea.	Mulching	Supply of Interculture implements through RKVY.
	Rainfed Deep brown loamy soil (medium rain)				

Contingency measures- End of the season

Condition			Suggested Contingency Measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation	Normal Crop/cropping system	Crop management	Rabi Crop planning	Remarks on Implementation
	Rainfed Medium brown loamy soil (high rain)	Bajra/Guar/Til/ Mustard/Wheat/Barley/Gram	Life-saving irrigation, Harvest the crop for fodder purpose. Weed free field.	Prepare the field Followed by soil planking to conserve moisture for rabi rainfed crops.	Supply of Interculture implements through RKVY.
	Rainfed Deep brown loamy soil (medium rain)				

Resource Management Technologies

- Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during *kharif* and *rabi* seasons
- Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during *kharif* and *rabi*
- Farm ponds for lifesaving irrigation to high value *rabi* crops
- Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
- Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
- Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
- Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
- Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
- Application of tank silt for increasing the moisture holding capacity and fertility of the soil

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	BIKANER
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	247	More than 19%	Less than 200.07
June	42.7		
July	92.2		
August	71.8		
September	40.3		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	665861	Gross irrigated area:	1133913
Net Rainfed area	998980	Gross rainfed area	1127133

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	286687	517682
Wells	379174	616231
Tanks	-	-
Other sources	-	-

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	0	0	
2	Jowar	56	19	37
3	Maize	2	2	0
4	Bajra	110222	1667	108555
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	-		
2	Groundnut	273797	273224	573
3	Sesamum	9847	128	9719
4	Soyabean	-		
5	Sunflower	-		
6	Castor	116		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	64311	64259	52
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	-		
2	Tobacco	-		
3	Guar seed	671802		0
4	Other Fodder crops	69609	69609	0

Crop Plan- Beginning of the season

Rainfed situation

Condition			Suggested Contingency Measures		
Early season drought (delayed onset)	Major Farming situation ^a	Crop/cropping system ^b	Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Delay by 4 weeks (Specify month) 1 st week of August	1.Rainfed Deep yellowish brown sandy soil	Bajra - ICMH 356, GHB 538, HHB 67 (I), RHB121, MPMH 17, RHB-177 Gaur - RGC1017, RGC 936, HG 365, RGC197, RGC1002, RGC1003, RGC-1066 Moth - RMO 40, RMO 435, RMO 423, RMO 225, RMO 257 Mung - SML-668, RMG-62, RMG-268, K-851	Reduce area under bajra and extra early varieties namely HHB 67(I), HHB 67, RHB 177, HHB 226, HHB 234 & BHB1202 may be grown for food/fodder security. Replace bajra area by gaur/ moth or mung however, Moth & guar short duration variety will be most preferable in such type of situations.	Sowing of bajra at wider (60cm) row spacing & use press wheel behind tine followed ridge & furrow making at 25-30 DAS. Apply 125% RDF or one spray of 0.50% to 1% NPK in late sown conditions at vegetative stage.	Seed source 1.NSSC 2. RSSC 3. NSP Certified/TFL seed from other authorised source.

Contingency measures- Mid season

Condition			Suggested Contingency Measures		
Mid-season drought (long dry spell)		Crop/cropping system ^b	Crop management ^c	Soil management ^d	Remarks on Implementation ^e
At vegetative stage	1. Rainfed Deep yellowish-brown sandy soil		Thinning of plants with in the row or removal of alternate row depending upon situation.	Timely removal of weeds, clean cultivation	

			Weeding and use of weeds as mulch or fodder for animals. Bajra can be harvested for fodder. Use mulches for checking the evaporation losses. Foliar spray of thiourea @ 0.05/0.10% solution in moth and guar respectively. Life-saving irrigation, if possible. Removal of lower leaves.	Timely operation of dust/vegetative mulching.	
	2. Rainfed Medium light yellowish-brown sandy soil		Thinning of plants with in the row or removal of alternate row depending upon situation. Weeding and use of weeds as mulch or fodder for animals. Bajra can be harvested for fodder. Use mulches for checking the evaporation losses. Foliar spray of thiourea @ 0.05/0.10% solution in moth and guar respectively. Life-saving irrigation, if possible. Removal of lower leaves.	Timely removal of weeds, clean cultivation Timely operation of dust/vegetative mulching.	

Condition			Suggested Contingency Measures		
Mid-season drought (long dry spell)	Major Farming situation ^a	Crop/cropping system ^b	Crop management ^c	Soil management ^d	Remarks on Implementation ^e
At reproductive stage	1. Rainfed Deep yellowish brown sandy soil		Use of antitranspirant. If available apply life irrigation. Removal of alternate rows of pearl millet and other crops. Removal of lower leaves. Apply anti-transpirant. Bajra can be harvested for fodder and intercrop be allowed to grow. Life-saving irrigation, use of anti-transparent to check the losses of moisture Under sever condition harvest for the crop. Remove 60% of leaves and use fodder purpose.	Weeding and dust mulching & clean cultivation. Life-saving irrigation if possible,	
	2. Rainfed Medium light yellowish-brown sandy soil		Use of anti-transpirant. If available apply life irrigation. Removal of alternate rows of pearl millet and other crops. Removal of lower leaves. Apply anti-transpirant. Bajra can be harvested for fodder and intercrop be allowed to grow.	Weeding and dust mulching & clean cultivation. Life-saving irrigation if possible,	

			Under sever condition harvest for the crop. Remove 60% of leaves and use fodder purpose.		
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Contingency measures- End of the season

Condition			Suggested Contingency Measures		
Terminal drought	Major Farming situation ^a	Crop/cropping system ^b	Crop management ^c	Rabi Crop planning ^d	Remarks on Implementation ^e
Terminal drought	1. Rainfed Deep yellowish brown sandy soil		Apply life-saving irrigation at grain filling / flowering to grain/legume or pulse crops, if possible. Reduce the plant population up to 50% depending on the severity of draught. Removal of alternate row of Bajra, lower leaves and use for fodder, or otherwise complete harvesting of bajra as fodder/hay/silage, if stress is too severe.	Kharif crops are harvested for fodder due to drought.	
	2. Rainfed Medium light yellowish-brown sandy soil		Apply life-saving irrigation at grain filling / flowering to grain/legume or pulse crops, if possible. Reduce the plant population up to 50% depending on the severity of draught. Removal of alternate row of Bajra, lower leaves and use for fodder, or otherwise complete harvesting of bajra as fodder/hay/silage, if stress is too severe.	Kharif crops are harvested for fodder due to drought.	

Irrigated situation

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Delayed/ limited release of water in canals due to low rainfall	Deep yellowish brown sandy soil Cannal Irrigated area	Ground nut- HNG-10, HNG-123, HNG-69, TG 37 A, TBG Cluster bean- RGC-986, RGC 1017-1066	Short duration varieties of groundnut like TG 37 A or TBG 39 or GG 20 be preferred in case of delayed release. In limited water condition irrigated cluster bean may be grown.	Water be applied through sprinkler irrigation, or limited water should be applied at critical stage only Timely removal of weeds, adoption of dust/veg. mulching. Apply 125% RDF or one spray of 0.50% to 1% NPK in late sown conditions at	Nil
Condition	Major Farming	Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Non release of	Deep yellowish	Ground nut	No possibilities of growing	Timely removal of	Nil

water in canals under delayed onset of monsoon in catchment	brown sandy soil Cannal irrigated areas	Cluster bean	of cotton & ground nut. Area be put under rain fed crops like bajra, clusterbean, moth and mung	weeds, clean cultivation & adoption of dust/ veg. mulch Apply 125% RDF or one spray of	
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Resource Management Technologies

- Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during *kharif* and *rabi* seasons
- Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during *kharif* and *rabi*
- Farm ponds for lifesaving irrigation to high value *rabi* crops
- Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
- Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
- Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
- Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
- Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
- Application of tank silt for increasing the moisture holding capacity and fertility of the soil

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	BUNDI
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	644.4	More than 19%	Less than 521.964
June	79.5		
July	233.1		
August	220.8		
September	111		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	256356	Gross irrigated area:	350388
Net Rainfed area	12859	Gross rainfed area	152727

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	118943	161042
Wells	134277	185050
Tanks	507	539
Other sources	2629	3757

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	90257	90175	82
2	Jowar	1043	7	1036
3	Maize	29623	1753	27870
4	Bajra	1369		1369
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	28	8	20
2	Groundnut	144	10	134
3	Sesamum	815	1	814
4	Soyabean	42009	317	41692
5	Sunflower	-		
6	Castor	-		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	11	11	0
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	165	165	0
2	Tobacco	-		
3	Guar seed	54		1653
4	Other Fodder crops	2217	564	1653

Crop Plan- Beginning of the season

Rainfed situation

Condition			Suggested Contingency Measures		
Early season drought (delayed onset)	Major Farming situation ^a	Normal Crop/cropping system ^b	Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Delay by 4 weeks (July 4 th week)	Deep brown loamy	Soybean (JS 335, JS 93-05, Pratap Soya-1)	Soybean (JS 93-05, JS 95-60) Or Urdbean (T-9, PU-19, KU-96-3) Or Sesamum (TC-25, RT-46, RT-123, RT-125)	Use of 10-15% higher seed rate in soybean	Link RSSC/NSC for seed supply and NREGA, RKVY for Construction of Farm pond
		Urdbean (Krishna, T-9, PU-19)	Urdbean (Krishna, T-9, PU-19, KU 96-3)	-	
		Mungbean K 851, ML-267	Mungbean K 851, ML-267	-	
		Sesamum (TC25, Pratap, RT-103, RT 46, RT 123, RT 125)	Sesamum (RT 46, RT 123, RT 125, RT 127)	-	
	Deep brown clayey	Soybean (JS 335, JS 93-05, Pratap Soya-1)	Soybean (JS 93-05, JS 95-60) Or Urdbean (T-9, PU-19, KU-96-3) Or Sesamum (TC-25, RT-46, RT-123, RT-125)	Use of 10-15% higher seed rate in soybean	
		Urdbean (Krishna, T-9, PU-19)	Urdbean (Krishna, T-9, PU-19, KU 96-3)	-	
		Mungbean K 851, ML-267	Mungbean K 851, ML-267	-	
		Sesamum (TC25, Pratap, RT-103, RT 46, RT 123, RT 125)	Sesamum (RT 46, RT 123, RT 125, RT 127)	-	
	Medium brown loamy	Soybean (JS 335, JS 93-05, Pratap Soya-1)	Soybean (JS 93-05, JS 95-60) Or Urdbean (T-9, PU-19, KU-96-3)	• Use of 10-15% higher seed rate in soybean	

			Or Sesamum (TC-25, RT-46, RT-123, RT-125)		
		Urdbean (Krishna, T-9, PU-19)	Urdbean (Krishna, T-9, PU-19, KU 96-3)	-	
		Mungbean K 851, ML-267	Mungbean K 851, ML-267	-	
		Sesamum (TC25, Pratap, RT-103, RT 46, RT 123, RT 125)	Sesamum (RT 46, RT 123, RT 125, RT 127)	-	
	Shallow yellowish-brown gravelly loam	Urdbean (Krishna, T-9, PU-19)	Urdbean (T-9, PU-19, KU-96-3)	Use of 10-15% higher seed rate in soybean	
		Mungbean K 851, ML-267	Mungbean K 851, ML-267	-	
		Sesamum (TC25, Pratap, RT-103, RT 46, RT 123, RT 125)	Sesamum (TC-25, RT-103, RT 46, RT 123, RT 125, RT 127)	-	
	Deep black clayey	Soybean (JS 335)	Soybean (JS 93-05, JS 95-60) Or Urdbean (T-9, PU-19, KU-96-3)	• Use of 10-15% higher seed rate in soybean	
		Urdbean (Krishna, T-9, PU-19, KU 96-3)	Urdbean (Krishna, T-9, PU-19, KU 96-3)	-	
		Mungbean K 851, ML-267	Mungbean K 851, ML-267	-	
		Sesamum (TC25, Pratap, RT-103, RT 46, RT 123, RT 125)	Sesamum (TC-25, RT-103, RT 46, RT 123, RT 125)	-	

Contingency measures- Mid season

Condition			Suggested Contingency Measures		
Mid-season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
At vegetative stage	Deep brown loamy	Soybean	Thinning of plants by 30 to 50% Weeding & hoeing	• Use of organic material as mulch • Use of anti-Transpirants like kaolin • Life-saving irrigation from farm pond in Alternate rows	Crop insurance Availability of inter-culture implements i.e. wheel hand hoe through RKVY Link watersheds, NREGA for the support of farm pond technology/water harvesting structures
		Maize	• Thinning of plants by 30 to 50% • Weeding & hoeing	• Use of organic materials as mulch • Spray of 2% urea • Use of anti-transpirants like kaolin • Life-saving Irrigation in alternate furrow system • Spray 2% urea	

		Urdbean/ Mungbean	• Weeding & hoeing	• Use of anti-transparent like kaolin • Spray 2% urea	
		Sesamum	• Weeding & hoeing	• Use of anti-transpirants like kaolin • Spray 2% urea	
	Deep brown clayey	Soybean	• Thinning of plants by 30 to 50% • Weeding & hoeing	• Use of organic material as mulch • Use of anti-transpirants like kaolin. • Spray 2% urea • Life-saving Irrigation in alternate furrow system	
		Maize	• Thinning of plants by 30 to 50% • Weeding & hoeing	• Use of organic material as mulch. • Spray of 2% urea • Use of anti-transpirants like kaolin. • Life-saving Irrigation in alternate furrow system • Spray 2% urea	
		Urdbean/ Mungbean	• Weeding & hoeing	• Use of anti-transparent like kaolin	
		Sesamum	• Weeding & hoeing	• Use of anti-transpirants like kaolin • Life-saving irrigation in alternate furrow system	
	Medium brown loamy	Soybean	• Thinning of plants by 30 to 50% • Weeding & hoeing	• Use of organic material as mulch • Use of anti-transpirants like kaolin • Life-saving Irrigation in alternate furrow system	
		Maize	-do-	• Use of organic materials as mulch • Spray of 2% urea • Use of anti-transpirants like kaolin • Life-saving Irrigation in alternate furrows • Spray 2% urea	

		Urdbean/ Mungbean	Weeding & hoeing	Use of anti-transparent like kaolin	
		Sesamum	Weeding & hoeing	Use of anti-transpirants like kaolin	
	Shallow yellowish-brown gravelly loam	Soybean	- Thinning of plants by 30 to 50% - Weeding & hoeing	- Use of organic materials as mulch - Use of Life saving Irrigation - anti-transpirants like kaolin	
		Maize	- Thinning of plants by 30 to 50% - Weeding & hoeing	- Use of organic materials as mulch. - Use of anti-transpirants like kaolin - Life-saving Irrigation in alternate furrows	
		Urdbean/ Mungbean	Weeding & hoeing	- Use of anti-transparent like kaolin. - Spray 2% of urea - Life-saving irrigation in alternate furrows	
		Sesamum	Weeding & hoeing	Use of anti-transpirants like kaolin	
	Deep black clayey	Soybean	- Thinning of plants by 30 to 50% - Weeding & hoeing	- Use of organic materials as mulch - Use of anti-transpirants like kaolin - Life-saving Irrigation in alternate furrows	
		Maize	-do-	- Use of organic materials as as mulch. - Spray of 2% urea - Use of anti-transpirants like kaolin - Life-saving Irrigation in alternate furrows	
		Urdbean/ Mungbean	Weeding & hoeing	Use of anti-transparent like kaolin	
		Sesamum	Weeding & hoeing	Use of anti-transpirants like kaolin	

Condition			Suggested Contingency Measures
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Mid-season drought (long dry spell)	Major Farming situation ^a	Normal Crop/ cropping system ^b	Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
At flowering/ fruiting stage	Deep brown loamy	Soybean		Spray of 0.1% thio urea Life-saving Irrigation in alternate furrows	Link watersheds, NREGA for the support of farm pond technology/water harvesting structures
		Maize	- Removal of lower leaves for fodder - Harvest cobs for table purpose (if market is available) and for green fodder - Harvesting of green cobs and green fodder	- Spray of 0.1% thio urea - Life-saving Irrigation in alternate furrows	
		Urdbean/ Mungbean		- Spray of 2.0% urea - Life-saving Irrigation by the harvested rainwater in alternate furrows	
		Sesamum		Life-saving Irrigation by the harvested rainwater	
	Deep brown clayey	Soybean		- Spray of 0.1% thio urea - Life-saving Irrigation in alternate furrows	
		Maize	- Removal of lower leaves for fodder - Harvest cobs for table purpose (if market is available) and for green fodder - Harvesting of green cobs and green fodder	- Spray of 0.1% thio urea - Life-saving Irrigation by the harvested rainwater in alternate furrows	
		Urdbean/ Mungbean		- Spray of 2.0% urea - Life-saving Irrigation by the harvested rainwater in alternate furrows	
		Sesamum		Life-saving Irrigation by the harvested rainwater in alternate furrows	
	Medium brown loamy	Soybean		- Spray of 0.1% thio urea - Life-saving Irrigation in alternate furrow	
		Maize	- Removal of lower leaves for fodder - Harvest cobs for table purpose (if market is available) and for green fodder - Harvesting of green cobs and green fodder	- Spray of 0.1% thio urea - Life-saving Irrigation by the harvested rainwater in alternate furrows	
		Urdbean/ Mungbean		Spray of 2.0% urea	

				Life-saving Irrigation by the harvested rainwater in alternate furrows	
		Sesamum		Life-saving Irrigation by the harvested rainwater	
	Shallow yellowish-brown gravelly loam	Soybean		- Spray of 0.1% thio urea - Life-saving Irrigation in alternate furrows	
		Maize	- Removal of lower leaves for fodder - Harvest cobs for table purpose (if market is available) and for green fodder - Harvesting of green cobs and green fodder	- Spray of 0.1% thio urea - Life-saving Irrigation by the harvested rainwater in alternate furrows	
		Urdbean/ Mungbean		- Spray of 2.0% urea - Life-saving Irrigation by the harvested rainwater in alternate furrows	
		Sesamum	Life-saving Irrigation by the harvested rainwater	Life-saving Irrigation by the harvested rainwater	
	Deep black clayey	Soybean	Life-saving Irrigation	- Spray of 0.1% thio urea - Life-saving Irrigation by the harvested rainwater in alternate furrows	
		Maize	- Removal of lower leaves for fodder - Harvest cobs for table purpose (if market is available) and for green fodder - Harvesting of green cobs and green fodder	- Spray of 0.1% thio urea - Life-saving Irrigation by the harvested rainwater in alternate furrows	
		Urdbean/ Mungbean		- Spray of 2.0% urea - Life-saving Irrigation by the harvested rainwater in alternate furrows	
		Sesamum	Life-saving Irrigation by the harvested rainwater	Life-saving Irrigation by the harvested rainwater in alternate furrows	

Contingency measures- End of the season

Condition			Suggested Contingency Measures		
Terminal drought	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Rabi Crop planning ^d	Remarks on Implementation ^e

(Early withdrawal of monsoon)					
	Deep brown loamy	Soybean	Life-saving Irrigation by harvesting rainwater in alternate furrows	If the damage will be severe, Plan for rabi crops rabi crops like chickpea, lentil and wheat	Link watersheds, NREGA for the support of farm pond technology/water harvesting structures
		Maize	- Life-saving Irrigation with the harvested rainwater in alternate furrows - Removal of lower leaves for fodder - Harvesting of green cobs and green fodder	-do-	
		Urdbean/Mungbean	Harvesting at physiological maturity	-do-	
		Sesamum	Harvesting at physiological maturity	-do-	
	Deep brown clayey	Soybean	Life-saving Irrigation in alternate furrows	-do-	
		Maize	- Life-saving Irrigation by the harvested rainwater in alternate furrows - Removal of lower leaves for fodder - Harvesting of green cobs and green fodder	-do-	
		Urdbean/ Mungbean	Harvesting at physiological maturity	-do-	
		Sesamum	Harvesting at physiological maturity	-do-	
	Medium brown loamy	Soybean	Life-saving Irrigation in alternate furrows	-do-	
		Maize	- Life-saving Irrigation by the harvested rainwater in alternate furrows - Removal of lower leaves for fodder - Harvesting of green cobs and green fodder	-do-	
		Urdbean/Mungbean	Harvesting at physiological maturity	-do-	
		Sesamum	Harvesting at physiological maturity	-do-	

	Shallow yellowish-brown gravelly loam	Soybean	Life-saving Irrigation in alternate furrows	-do-	
		Maize	- Life-saving Irrigation by the harvested rainwater in alternate furrows - Removal of lower leaves for fodder - Harvesting of green cobs and green fodder	-do-	
		Urdbean/Mungbean	Harvesting at physiological maturity	-do-	
		Sesamum	Harvesting at physiological maturity	-do-	
	Deep black clayey	Soybean	Life-saving Irrigation in alternate furrows	-do-	
		Maize	- Life-saving Irrigation by the harvested rainwater in alternate furrows - Removal of lower leaves for fodder - Harvesting of green cobs and green fodder	-do-	
		Urdbean/Mungbean	Harvesting at physiological maturity	-do-	
		Sesamum	Harvesting at physiological maturity	-do-	

Drought - Irrigated situation

Condition	Suggested Contingency measures				
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Delayed release of water in canals due to low rainfall	Deep brown loamy	Soybean/ Maize-wheat	Soybean/Maize –wheat/ barley/gram/ coriander Wheat : Raj 3077, HI 8498, Raj 3765, Raj 4037, Raj 3777, HI 1531, LoK-1 Coriander : RCr-20, 436, 480, 684, CS-6 Gram : C-235, Dahod yellow, Pratap chana – 1, GNG 469, KAK 2 Barley: RD-2552, RD-2052	- Irrigation at critical crop growth stages - pressurized irrigation system (Sprinkler)	If pond is available sowing can be done by harvested rain water Create awareness and skill improvement to the farmers through KVK and other related agencies
	Deep brown clayey	Soybean/ Maize-wheat	Soybean/Maize –wheat/ barley/gram/ coriander Wheat : Raj 3077, HI 8498, Raj 3765, Raj 4037, Raj 3777, HI 1531, LoK-1 Coriander : RCr-20, 436, 480, 684, CS-6 Gram : C-235, Dahod yellow, Pratap chana – 1, GNG 469, KAK 2 Barley: RD-2552, RD-2052	-do-	
		Paddy-wheat	Paddy-Wheat Wheat: Raj-3777, Lok-1, Raj-3765	Irrigation at critical crop growth stages	

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
				pressurized irrigation system (Sprinkler) Use of Roto till drill for sowing	
	Medium brown loamy	Soybean/ Maize-wheat	Soybean/Maize –wheat/ barley/gram/ coriander Wheat : Raj 3077, HI 8498, Raj 3765, Raj 4037, Raj 3777, HI 1531, LoK-1 Coriander : RCr-20, 436, 480, 684, CS-6 Gram : C-235, Dahod yellow, Pratap chana – 1, GNG 469, KAK 2 Barley: RD-2552, RD-2052	Irrigation at critical crop growth stages pressurized irrigation system (Sprinkler)	
	Shallow yellowish brown gravelly loam	Soybean/Maize-wheat	Soybean/Maize –wheat/ barley/gram/ coriander Wheat : Raj 3077, HI 8498, Raj 3765, Raj 4037, Raj 3777, HI 1531, LoK-1 Coriander : RCr-20, 436, 480, 684, CS-6 Gram : C-235, Dahod yellow, Pratap chana – 1, GNG 469, KAK 2 Barley: RD-2552, RD-2052	- Irrigation at critical crop growth stages - pressurized irrigation system (Sprinkler)	
	Deep black clayey	Soybean/Maize-wheat	Soybean/Maize –wheat/ barley/gram/ coriander Wheat : Raj 3077, HI 8498, Raj 3765, Raj 4037, Raj 3777, HI 1531, LoK-1 Coriander : RCr-20, 436, 480, 684, CS-6 Gram : C-235, Dahod yellow, Pratap chana – 1, GNG 469, KAK 2 Barley: RD-2552, RD-2052	-do-	
		Paddy-wheat	Paddy-Wheat Wheat: Raj-3777, Lok-1, Raj-3765	- Use of Roto till drill for sowing - Irrigation at critical crop growth stages pressurized irrigation system (Sprinkler)	

condition			Suggested Contingency measures		
	Major Farming situation ^f	Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Non release of water in canals under delayed onset of monsoon in catchment's	Deep brown loamy	Soybean/Maize-Wheat/Gram Or Fallow-Mustard	Soybean/Maize-Gram/ Coriander/ Or Fallow-Mustard/ Gram/ Coriander	- Irrigation by sprinkler system if water is available from other sources - Soil stirring for dust mulch - Weed removal - Use of anti transpirant i.e. Kaolin - Spray of urea at 2-3% as per recommendation - Spray of thio urea 0.1%	Link watersheds and NREGA for Construction of Rain water harvesting structures

condition			Suggested Contingency measures		
	Major Farming situation ^f	Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
	Deep brown clayey	Soybean/Maize-Wheat/Gram Or Fallow-Mustard Or Paddy-Fallow	Soybean/Maize-Gram/ Coriander/ Or Fallow-Mustard/ Gram/ Coriander Or Paddy-Lentil	• Irrigation by sprinkler irrigation system if water is available from other sources • Soil stirring for dust mulch • Weed removal • Use of anti transpirant i.e. Kaolin • Spray of urea at 2-3% as per recommendation • Spray of thio urea 0.1%	
	Medium brown loamy	Soybean/Maize-Wheat/Gram Or Fallow-Mustard	Soybean/Maize-Gram/ Coriander/ Or Fallow-Mustard/ Gram/ Coriander	• Irrigation by sprinkler irrigation system if water is available from other sources • Soil stirring for dust mulch • Weed removal • Use of anti transpirant i.e. Kaolin • Spray of urea at 2-3% as per recommendation • Spray of thio urea 0.1%	
	Shallow yellowish brown gravelly loam	Soybean/Maize-Wheat/Gram Or Fallow-Mustard	Soybean/Maize-Gram/ Coriander/ Or Fallow-Mustard/ Gram/ Coriander	• Irrigation by Sprinkler irrigation system if water is available from other sources • Soil stirring for dust mulch • Weed removal • Use of anti transpirant i.e. Kaolin • Spray of urea at 2-3% as per recommendation • Spray of thio urea 0.1%	
	Deep black clayey	Soybean/Maize-Wheat/Gram Or Fallow-Mustard Or Paddy-Fallow	Soybean/Maize-Gram/ Coriander/ Or Fallow-Mustard/ Gram/ Coriander Or Paddy-Lentil	• Irrigation by Sprinkler irrigation system if water is available from other sources • Soil stirring for dust mulch • Weed removal • Use of anti transpirant i.e. Kaolin • Spray of urea at 2-3% as per recommendation • Spray of thio urea 0.1%	

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	Deep brown loamy	No Sowing and water is used for drinking of Animals and other domestic use	If adequate moisture is available for germination sowing of crops i.e. mustard, Gram, Lentil, Taramira in Tank beds	• Soil stirring for dust mulch • Weed removal • Use of anti transpirant i.e. Kaolin • Spray of urea @ 2-3% as per recommendation • Spray of thio urea 0.1%	Deepening of Tanks under NREGA if tanks are kept fallow
	Deep brown clayey	No Sowing and water is used for drinking of Animals and other domestic use	If adequate moisture is available for germination sowing of crops i.e. mustard, Gram,	• Soil stirring for dust mulch • Weed removal • Use of anti transpirant i.e. Kaolin • Spray of urea @ 2-3% as per recommendation	

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
			Lentil, Taramira in Tank beds	Spray of thio urea 0.1%	
	Medium brown loamy	No Sowing and water is used for drinking of Animals and other domestic use	If adequate moisture is available for germination sowing of crops i.e. mustard, Gram, Lentil, Taramira in Tank beds	- Soil stirring for dust mulch - Weed removal - Use of anti transpirant i.e. Kaolin - Spray of urea @ 2-3% as per recommendation - Spray of thio urea 0.1%	
	Shallow yellowish brown gravelly loam	No Sowing and water is used for drinking of Animals and other domestic use	If adequate moisture is available for germination sowing of crops i.e. mustard, Gram, Lentil, Taramira in Tank beds	- Soil stirring for dust mulch - Weed removal - Use of anti transpirant i.e. Kaolin - Spray of urea @ 2-3% as per recommendation - Spray of thio urea 0.1%	
	Deep black clayey	No Sowing and water is used for drinking of Animals and other domestic use	If adequate moisture is available for germination sowing of crops i.e. mustard, Gram, Lentil, Taramira in Tank beds	- Soil stirring for dust mulch - Weed removal - Use of anti transpirant i.e. Kaolin - Spray of urea @ 2-3% as per recommendation - Spray of thio urea 0.1%	

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Insufficient groundwater recharge due to low rainfall	Deep brown loamy	Soybean/Maize-Wheat	Soybean/Maize-Gram/Coriander/Linseed/Lentil/Mustard/Durum Wheat	- Irrigation by pressurized irrigation system (DRIP or Sprinkler) - If one irrigation apply at CRI stage in wheat, if two apply at CRI and Flowering - Soil stirring for dust mulch - Timely weed removal - Use of Anti Transpirant i.e. Keoline - Spray of Thiourea 0.1%	Rain water harvesting and Recharge of dead Wells from NREGA

Resource Management Technologies

- Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during *kharif* and *rabi* seasons
- Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during *kharif* and *rabi*
- Farm ponds for lifesaving irrigation to high value *rabi* crops
- Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
- Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
- Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
- Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
- Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
- Application of tank silt for increasing the moisture holding capacity and fertility of the soil

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	CHURU
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	334	More than 19%	Less than 270.54
June	52.6		
July	130.1		
August	96.7		
September	54.6		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	269890	Gross irrigated area:	428204
Net Rainfed area	867681	Gross rainfed area	1269965

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	21711	38966
Wells	248179	389238
Tanks	-	-
Other sources	-	-

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	0	0	
2	Jowar	4	-	
3	Maize	28		28
4	Bajra	210305	7973	202332
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	-		
2	Groundnut	82288	81969	319
3	Sesamum	2880	7	2873
4	Soyabean	-		
5	Sunflower	-		
6	Castor	1		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	25004	24875	129
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	-		
2	Tobacco	-		
3	Guar seed	195110		0
4	Other Fodder crops	7499	7499	0

Crop Plan- Beginning of the season

Rainfed situation

Condition			Suggested Contingency Measures		
Early season drought (delayed onset)	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delay by 4 weeks (Specify month) Last week of July	1. Rainfed Deep yellowish brown sandy soil	Bajra-ICMH356, Raj 171, Pusa 605, HHB67, HHB60, GHB538, HHB 67 (I) Gaur-RGC1017, RGC 936, HG75, RGC197, RGC1002, RGC1003 Moth-RMO 40, RMO 435, RMO423, RMO225, RMO257. Mung-SML-668, MUM-2, RMG-62, RMG268, K-851	1. Bajra be grown for fodder purpose, in small area extra early varieties of bajra HHB 67 (I), HHB 67 be grown for food security, Replace bajra by gaur/ moth or mung 2. Moth and guar will be most preferable crop in such type of situations.	Sowing of bajra at 60 cm row spacing, Use press wheel behind to secure good germination, Transplanting of bajra seedling if available, Timely removal of weeds, clean cultivation & adoption of dust/vegetative mulching. Apply 125% RDF or one spray of 0.50% to 1% NPK in late sown conditions at vegetative stage.	Seed source 1. NSSC 2. RSSC 3. NSP
	2. Rainfed Medium light yellowish brown sandy soil & Other soils	Bajra-ICMH356, Raj 171, Pusa 605, HHB67, HHB60, GHB538, HHB 67 (I), RHB-177 Gaur-RGC1017, RGC936, HG75, RGC 197, RGC1002, RGC1003, RGC-1066 Moth-RMO40, RMO 435, RMO423, RMO 225, RMO257. Mung-SML-668, MUM-2, RMG-62, RMG268, K-851	1. Bajra be grown for fodder purpose, in small area extra early varieties of bajra HHB 67 (I), HHB67 be grown for food security, Replace bajra by gaur/ moth or mung 2. Moth and guar will be most preferable crop in such type of situations.	Sowing of bajra at 60 cm row spacing, Use press wheel behind to secure good germination, Transplanting of bajra seedling if available, Timely removal of weeds, clean cultivation & adoption of dust/vegetative mulching. Apply 125% RDF or one spray of 0.50% to 1% NPK in late sown conditions at vegetative stage.	Seed source 1. NSSC 2. RSSC 3. NSP

Contingency measures- Mid season

Condition			Suggested Contingency Measures		
Mid-season drought(long dry spell)	Major Farming situation ^a	Crop/cropping system ^b	Crop management ^c	Soil management ^d	Remarks on Implementation ^e
At vegetative stage	1 Rainfed Deep yellowish-brown sandy soil		Thinning of plants with in the row or removal of alternate row depending upon situation, Weeding and use of weeds as mulch or fodder for animals. Life-saving irrigation if possible. Use mulches for checking the evaporation losses. Bajra can be harvested for fodder. Spray of thiourea @ 500 ppm in moth and guar	Timely removal of weeds, clean cultivation in between intra row spacing & adoption of dust/vegetative mulching.	

Condition			Suggested Contingency Measures		
Mid-season drought(long dry spell)	Major Farming situation ^a	Crop/cropping system ^b	Crop management ^c	Soil management ^d	Remarks on Implementation ^e
	2. Rainfed Medium light yellowish brown sandy soil & Other soils		Thinning of plants with in the row or removal of alternate row depending upon situation, Weeding and use of weeds as mulch or fodder for animals. Life-saving irrigation if possible. Use mulches for checking the evaporation losses. Bajra can be harvested for fodder. Spray of thiourea @ 500 ppm in moth and guar	Timely removal of weeds, clean cultivation in between intra row spacing & adoption of dust/vegetative mulching.	

Condition			Suggested Contingency Measures		
Mid-season drought(long dry spell)	Major Farming situation ^a	Crop/cropping system ^b	Crop management ^c	Soil management ^d	Remarks on Implementation ^e

At reproductive stage	1 Rainfed Deep yellowish-brown sandy soil		Use of antitranspirant. Removal of alternate rows of pearl millet and other crops, if situation is very severe. Bajra can be harvested for fodder and intercrop be allowed to grow, Spray of thiourea @ 500ppm in moth and guar. Apply antitranspirant. Removal of 60% of lower leaves and use it as a fodder purpose.	Weeding and dust mulching, Life-saving irrigation if possible,	
	2. Rainfed Medium light yellowish-brown sandy soil & Other soils	Bajra-ICMH356, Raj 171, Pusa 605, HHB67, HHB60, GHB538, HHB 67 (I), RHB-177, MPMH-17 Gaur-RGC1017, RGC 936, HG75, RGC197, RGC1002, RGC1003, RGC-1066 Moth-RMO40, RMO 435, RMO423, RMO 225, RMO257. Mung-SML-668, MUM-2, RMG-62, RMG-268, K-851	Use of antitranspirant. Removal of alternate rows of pearl millet and other crops, if situation is very severe. Bajra can be harvested for fodder and intercrop be allowed to grow, Spray of thiourea @ 500ppm in moth and guar. Apply antitranspirant. Removal of 60% of lower leaves and use it as a fodder purpose.	Weeding and dust mulching, Life-saving irrigation if possible,	Seed source 1. NSSC 2. RSSC 3. NSP 4. Water harvesting structure can be constructed under MANREGA

Contingency measures- End of the season

Condition			Suggested Contingency Measures		
Terminal drought	Major Farming situation	Crop/cropping system	Crop management	Soil management	Remarks on Implementation
	1 Rainfed Deep yellowish-brown sandy soil		Dust mulching, Life-saving irrigation if possible. Reduce the plant population depending on the period of draught, Removal of alternate row of Bajra or fodder, If stress is severe complete harvesting of bajra as fodder/hay/silage.	If kharif crop is Harvested for fodder or severely affected by drought, moisture conservation by Compartmental bunding of field and deep ploughing for conserving moisture in the soil for sowing of rainfed Rabi crop mustard, taramira, gram from 15 Sept. onward should be started.	

	2. Rainfed Medium light yellowish- brown sandy soil & Other soils		Dust mulching, Life-saving irrigation if possible. Reduce the plant population depending on the period of draught, Removal of alternate row of Bajra for fodder, If stress is severe complete harvesting of bajra as fodder/hay/silage.	If kharif crop is harvested for fodder or severely affected by drought, moisture conservation by compartmental bunding of field and deep ploughing for conserving moisture in the soil for sowing of rainfed rabi crop mustard, taramira, gram from 15 Sept. onwards should be started.	
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Irrigated situation

Condition			Suggested Contingency measures		
	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed/ limited release of water in canals due to low rainfall	Rainfed Medium light yellowish brown sandy soil	Groundnut-HNG- 10, HNG- 123, TG37A, TBG39	Short duration varieties of groundnut like TG 37 A or TBG 39 be preferred in case of delayed release. In limited	Water be applied through sp rinkler irrigation, In case of limited water it should	Nil
		Cluster bean-RGC- 986, RGC 1017			

Condition			Suggested Contingency measures		
	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
	& Other soils	Moong RMG- 62, RMG-268, K-851, SML-668	water condition irrigated cluster bean be grown. Desi cotton be preferred in place of American cotton.	be applied at critical stage. Timely removal of weeds, clean cultivation in between intra row spacing & adoption of dust/ vegetative mulching, Spray of thiourea @ 500 ppm in guar. Alternate furrow irrigation in cotton be practiced	

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j

Non release of water in canals under delayed onset of monsoon in catchment	Rainfed Medium light yellowish brown sandy soil & Other soils	Only fodder crops if water is released in canal.	No possibilities of growing of groundnut. Area best suited under rain fed crops like bajra, cluster bean, moth and mung	Timely removal of weeds, clean cultivation in between intra row spacing & adoption of dust/vegetative mulching, Spray of thiourea @ 500ppm in guar.	
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Resource Management Technologies

- Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during *kharif* and *rabi* seasons
- Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during *kharif* and *rabi*
- Farm ponds for lifesaving irrigation to high value *rabi* crops
- Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
- Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
- Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
- Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
- Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
- Application of tank silt for increasing the moisture holding capacity and fertility of the soil

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	DAUSA
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	594.5	More than 19%	Less than 481.545
June	67.3		
July	217.9		
August	202		
September	107.3		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	141199	Gross irrigated area:	143042
Net Rainfed area	76353	Gross rainfed area	206045

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	-	-
Wells	141167	143010
Tanks	-	-
Other sources	32	32

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	0	0	
2	Jowar	1656	5	1651
3	Maize	228	13	215
4	Bajra	142785	344	142441
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	-		
2	Groundnut	16335	823	15512
3	Sesamum	6219	27	6192
4	Soyabean	-		
5	Sunflower	-		
6	Castor	-		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	1	1	0
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	-		
2	Tobacco	1	1	0
3	Guar seed	3154		312
4	Other Fodder crops	1131	819	312

Crop Plan- Beginning of the season

Rainfed situation

Condition			Suggested Contingency Measures		
Early season Drought (delayed onset)	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delay by 4 weeks (4 th week of July)	Deep brown loamy Soils (Rainfed)	Pearl millet-Fallow	Green gram-fallow	Seedsoaking with 0.1% thiourea	Link NSSC, RSSC, and NSP for good quality seed
		Cluster bean-fallow	Cowpea-fallow	-do-	
		Green gram-fallow	No Change	-do-	
	Medium brown loamy soils/Deep dark brown sandy soils/Other soils	Sorghum-Mustard	Urdbean-mustard	mulching	
		Urdbean-Mustard	No Change	-do-	
		Sesame-Gram	Cowpea-gram	-do-	
		Cotton-Wheat	Urdbean-fallow	-do-	
		Groundnut-Wheat	Urdbean-fallow	-do-	
		Groundnut-Wheat	Urdbean-fallow	-do-	

Contingency measures- Mid season

Condition			Suggested Contingency Measures		
Midseason Drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture Conservation measures	Remarks on Implementation
At vegetative stage	Deep brown loamy soils (Rainfed)	Pearl millet	Removal of alternate rows Timely weed control	Dust mulch with hoeing Life-saving irrigation	Link. NSSC, RSSC, NSP for good quality seed, Link W MA, NREGA for the support of Water harvesting structure
		Sorghum	Removal of alternate rows Timely weed control	Dust mulch with hoeing Life-saving irrigation	
		Cluster bean	Removal of alternate rows Timely weed control	Dust mulch with hoeing Life-saving irrigation	
		Sorghum	-	Spray of thiourea@500 ppm	

	Medium brown loamy soils/ Deep dark brown sandy soils/ Other soils	Sesamum	-	Spray of thiourea@500 ppm to conserve the moisture Life-saving irrigation	
		Pigeonpea	-	Sprayofthiourea@500ppm To conserve the moisture Life-saving irrigation	
		Cotton	-	Hoeing and weeding to Conserve moisture Life-saving irrigation	

Condition			Suggested Contingency Measures		
Mid-season drought (long dry spell)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture Conservation measures	Remarks on Implementation
At flowering/ fruiting stage	Deep brown Loamy soils (Rainfed)	Pearl millet	Supplementary/Life Saving irrigation	-	Link. NSSC, RSSC, NSP for good quality seed, Link W MA, NREGA for the support of Water harvesting structure
		Sorghum	-do-	-	
		Cluster bean	-do-	-	
	Medium brown Loamy soils/Deep dark brown sandy soils/Other soils	Sorghum	Supplementary/lifesaving irrigation	-	
		Sesame	-do-	-	
		Pigeon pea	-do-	-	
		Cotton	-do-	-	

Contingency measures- End of the season

Condition			Suggested Contingency Measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation	Normal Crop/cropping system	Crop management	Rabi Crop planning	Remarks on Implementation
	Deep brown loamy Soils (Rainfed)	Pearl millet	Life-saving irrigation Harvest at physiological maturity or harvest for fodder if damage will be severe	Do not take rabi crop	Link. NSSC, RSSC, NSP for good quality seed, Link W MA, NREGA for the support of Water harvesting structure
		Cluster bean	-do-	-do-	
		Kharif pulses	-do-	-do-	
	Medium brown Loamy soils/ Deep dark brown sandy soils/Other soils	Sorghum	Life-saving irrigation Harvest at physiological maturity or harvest for fodder if damage will be severe	Do not take rabi crop	
		Sesamum	-do-	-do-	
		Pigeon pea	Life-saving irrigation	-do-	
		Cotton	-do-	-do-	

Drought-Irrigated situation

Condition			SuggestedContingencymeasures		
	Major Farming	Normal Crop/cropping	Changein crop/cropping	Agronomicmeasures	Remarkson Implementatio

Delayed release of water in canals due to low rainfall: NA	N.A
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Condition	Suggested Contingency measures				
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation

Condition	Suggested Contingency measures				
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Limited release of water in canals due to low rainfall: NA				N . A	

Condition	Suggested Contingency measures				
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non release of water in canals under delayed onset of monsoon in catchment: NA		N.A			

Condition	Suggested Contingency measures				
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Lack of inflows into tanks due to insufficient / delayed onset of monsoon	Tank bed and River	Fallow-Mustard	N oC ba	Use moisture	Create awareness and skills of the technologies to the farming community
		Fallow-Gram	-	-	
		Fallow-Linseed	-	-	
		Fallow-Mustard-	Fallow-Fallow-	-	
		Fallow-Mustard-	Fallow-Fallow-	-	
		Fallow-Gram-Cucurbits	Fallow-Fallow-	-	

Condition	Suggested Contingency measures				
	Major Farming situation	Normal Crop/cropping	Change in crop/cropping	Agronomic measures	Remarks on Implementation
Insufficient groundwater recharged due to low rainfall	Coarse textured soils (Borewell/Open well) (Irrigated)	Pearl millet-Wheat	Green gram-Mustard	Select short duration and low water requirement cultivars Give irrigation at critical crop growth stages Use micro irrigation systems like sprinklers if feasible Alternate furrow irrigation	Create awareness and skills of the technologies to the farming community through KVKS
		Groundnut-	Cowpea-Mustard	-	
		Cluster bean-Barley	Cluster bean-Gram	- d o	
		Cotton-Wheat	Pearl millet-Barley	-	

	Medium textured soils (Borewell/openwell)(Irrigated)	Groundnut-	Greengram-	-	
		Sorghum-Mustard	Urdbean-Mustard	- d o -	
	Brackish Irrigation water areas	Fallow-Barley	Fallow-Barley	Seed treatment with 0.1% NaCl Give irrigation at critical crop growth stages Use micro irrigation systems like sprinklers if feasible Alternate furrow irrigation	
		Fallow-Wheat	Fallow-Fallow	-do-	

Resource Management Technologies

- Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during *kharif* and *rabi* seasons
- Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during *kharif* and *rabi*
- Farm ponds for lifesaving irrigation to high value *rabi* crops
- Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
- Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
- Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
- Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
- Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
- Application of tank silt for increasing the moisture holding capacity and fertility of the soil

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	DHAULPUR
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	584.1	More than 19%	Less than 473.121
June	61.6		
July	201		
August	202.8		
September	118.7		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	141892	Gross irrigated area:	143833
Net Rainfed area	13281	Gross rainfed area	89597

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	13514	13514
Wells	128283	130224
Tanks	-	-
Other sources	95	95

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	153	40	113
2	Jowar	157	-	
3	Maize	0		
4	Bajra	81762	435	81327
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	33	21	12
2	Groundnut	18	2	16
3	Sesamum	1139	4	1135
4	Soyabean	-		
5	Sunflower	-		
6	Castor	-		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	-		
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	3	3	0
2	Tobacco	-		
3	Guar seed	185		443
4	Other Fodder crops	1193	750	443

Crop Plan- Beginning of the season

Rainfed situation

Condition					
Early season drought (delayed onset)	Major Farming situation ^a	Normal Crop/cropping system ^b	Change in crop/cropping system ^c (short duration)	Agronomic measures ^d	Remarks on Implementation ^e
Delay by 4 weeks (Specify month) July III week	Rainfed- Deep brown loamy soil (high rain) Rainfed Medium brown loamy soil (medium rain)	Bajra/ Guar/ Til/ Mustard/ Wheat/ barley/ gram	Bajra -HHB-67(Improved), HHB-94, ICMH-356, RHB-177, RHB-171, RHB-30, ICTP 8203 Guar : RGC-1066, RGC-1038, RGC-1003, RGC-936 Til : RT-351, RT-125, RT-346	Prepare seed nursery of bajra & transplant in July end. Inter cropping of bajra (Paired 2 rows of bajra at 30 cm & only one row of moong /guar)	Seed drill under RKVY, supply of seed through RSSC, NSC, Bio-fertilizers, plain water harvesting structures, for regular fodder supply planting of Ardu, subabul, etc. at farmer & village level. Desilting of ponds to increase their capacity.

Contingency measures- Mid season

Condition			Suggested Contingency Measures		
Mid-season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
At vegetative stage	Rainfed- Deep brown loamy soil (high rain)	Bajra/ Guar/ Til/ Mustard/ Wheat/ barley/ gram	Life-saving irrigation, thinning, weeding. Spraying of 1% thiourea in bajra, guar, etc.		Supply of interculture implements through RKVY.
	Rainfed Medium brown loamy soil (medium rain)				

Condition			Suggested Contingency Measures		
Mid-season drought (long dry spell)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
At flowering/ fruiting stage	Rainfed- Deep brown loamy soil (high rain)	Bajra/ Guar/ Til/ Mustard/ Wheat/ barley/ gram	Life-saving irrigation, spray of 0.1% thiourea + 0.2%, FeSO ₄ 0.5%, K ₂ SO ₄ / KCl + 1% urea.	Mulching	Supply of intercultural implements through RKVY.
	Rainfed Medium brown loamy soil (medium rain)				

Contingency measures- End of the season

Condition			Suggested Contingency Measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation	Normal Crop/cropping system	Crop management	Rabi Crop planning	Remarks on Implementation
	Rainfed- Deep brown loamy soil (high rain)	Bajra/ Guar/ Til/ Mustard/ Wheat/ barley/ gram	Life-saving irrigation, harvest the crop for fodder purpose. Weed free field.	Harvested field: prepare the field followed by soil planking to conserve moisture for rabi rainfed crops.	Supply of interculture implements through RKVY.
	Rainfed Medium brown loamy soil (medium rain)				

Irrigated Situation: NA

Resource Management Technologies

- Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during *kharif* and *rabi* seasons
- Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during *kharif* and *rabi*
- Farm ponds for lifesaving irrigation to high value *rabi* crops
- Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
- Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
- Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
- Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
- Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
- Application of tank silt for increasing the moisture holding capacity and fertility of the soil

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	DUNGARPUR
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	706.5	More than 19%	Less than 572.265
June	89.6		
July	236.4		
August	241.1		
September	139.4		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	64085	Gross irrigated area:	64236
Net Rainfed area	41251	Gross rainfed area	113165

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	9271	9271
Wells	52074	52222
Tanks	206	206
Other sources	2534	2537

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	11289	10	11279
2	Jowar	43	-	
3	Maize	44415	64	44351
4	Bajra	74		74
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	387		387
2	Groundnut	22		22
3	Sesamum	186		186
4	Soyabean	36023	3	36020
5	Sunflower	-		
6	Castor	27		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	332	43	289
2	Jute	-		

3	Mesta	-		
4	Sunhemp	2		2

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	7	2	5
2	Tobacco	-		
3	Guar seed	3		1357
4	Other Fodder crops	1502	145	1357

Crop Plan- Beginning of the season

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on implementation
Delay by 4 weeks (specify month) July 3 rd week	Red gravelly loam hilly shallow to medium deep soil	Maize/Urd	Urd/Til Or Maize for green cobs/Fodder (African Tall) Urd: T-9, Barkha, PU-31 Sesame: RT-46, RT-125, Maize: African Tall	- Increase seed rate by 10-15% of pulses and sesame - Chemical weed control may be preferred	Seed of short duration varieties must be ensured through NSC, RSSC and other seed sources
	Brown loamy medium to deep soil	Paddy/Maize	Urd//Til/Cluster bean Or Maize for green cobs/Fodder (African Tall) Urd: T-9, Barkha, PU-31 Sesame: RT-46, RT-125, Cluster Bean: RG-936, RGC-1017 Transplanted Rice	- Increase seed rate by 10-15% of Pulses and sesame - Chemical weed control may be preferred - Transplanted Rice to be maintained on SRI	Seed of short duration varieties must be ensured through NSC, RSSC and other seed sources
	Red gravelly loam hilly eroded soil	Maize/Urd/ pigeon pea/ castor	Maize Fodder: African Tall Urd: T-9, Barkha, PU-31 Pigeonpea: ICPL-87, BDN-2	- Increase seed rate by 10-15% of Pulses and sesame - Chemical weed control may be preferred	Seed of short duration varieties must be ensured through NSC, RSSC and other seed sources

Contingency measures- Mid season

Condition			Suggested Contingency measures
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Mid-season drought (long dry spell, consecutive 2 weeks rainless (>2.5mm period)) At vegetative stage (30-40 DAS)	Major farming situation	Crop/cropping system	Crop Management	Soil nutrient & moisture conservation measures	Remarks on implementation
	Red gravelly loam hilly shallow to medium deep soil	Maize/Urd	• Clean cultivation through repeated light intercultural operations. • Mulching (green leaf)/insitu mulching by removing alternate rows in maize • Remove susceptible crop for fodder and retain hardy crop among the crop mixtures • Use of antitransparent /removing lower leaves in maize • Tying of ridges at 6-8 intervals for conserving rain water • Remove alternate rows • 7Life saving irrigation if possible.	- Earthing in maize at 30-35 DAS and spray of 2% urea in 800-1000 lit water - Foliar spraying of nutrients - Mulching	
	Brown loamy medium to deep soil	Paddy/Maize	• Clean cultivation through repeated light intercultural operations. • Spray of 2% urea in 800-1000 lit water • Mulching (green leaf)/insitu mulching by removing alternate rows in upland rice. • Maintain only saturated condition for transplanted rice. • Tying of ridges of 6-8 intervals for conserving rain water • Remove alternate rows for maize	- Earthing in maize at 30-35 DAS and spray of 2% urea in 800-1000 lit water -Foliar spraying of nutrients -Mulching	
	Red gravelly loam hilly eroded soil	Maize/Urd/pigeon pea/cast	• Clean cultivation through repeated light intercultural operations. • Mulching (green leaf)/insitu mulching by removing alternate rows in maize • Remove susceptible crop for fodder	- Earthing in maize/cotton at 35 DAS & spray of 2% urea in 800-1000 lit water - Foliar spraying of nutrients	

Condition			Suggested Contingency measures		
Mid season drought (long dry spell)	Major farming situation	Crop/ cropping system	Crop Management	Soil nutrient & moisture conservation measures	Remarks on implementation
At reproductive stage (45-55 DAS)	Red gravelly loam hilly shallow to medium deep soil	Maize/Urd	- Life saving irrigation if possible - Maize can be harvested for baby corn if market is available - Removal of lower leaves in maize for fodder - In situ mulching of weeds	Rain water harvesting and it's re-use for crop saving 2% urea spray in 800-1000 lit water Thio urea @ 500 ppm spray Use of anti transpirants	
	Brown loamy medium to deep soil	Paddy/Maize	- Life saving irrigation if possible - Maintain sub saturated to saturated condition for transplanted rice to avoid soil cracks. - In situ mulching of weeds - Maize can be harvested for baby corn if market is available	Rain water harvesting and it's re-use for crop saving 2% urea spray in 800-1000 lit water Thio urea @ 500 ppm spray Use of anti transpirants	

	Red gravely loam hilly eroded soil	Maize/Urd/ pigeon pea/ca	- Life saving irrigation if possible - Maize should be harvested for baby corn if market is available - Removal of lower leaves in maize/removal of alternate rows in maize for fodder. - In situ mulching of weeds	Rain water harvesting and it's re-use for crop saving 2% urea spray in 800-1000 lit water Thio urea @ 500 ppm spray Use of anti transpirants	
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Contingency measures- End of the season

Condition			Suggested Contingency measures		
Mid-season drought (long dry spell)	Major farming situation	Crop/ cropping system	Crop Management	Soil nutrient & moisture conservation measures	Remarks on implementation
At reproductive stage (45-55 DAS)	Red gravely loam hilly shallow to medium deep soil	Maize/Urd	- Life saving irrigation if possible - Maize can be harvested for baby corn if market is available - Removal of lower leaves in maize for fodder - In situ mulching of weeds	Rain water harvesting and it's re-use for crop saving 2% urea spray in 800-1000 lit water Thio urea @ 500 ppm spray Use of anti transpirants	
	Brown loamy medium to deep soil	Paddy/Maize	- Life saving irrigation if possible - Maintain sub saturated to saturated condition for transplanted rice to avoid soil cracks. - In situ mulching of weeds .Maize can be harvested for baby corn if market is available	Rain water harvesting and it's re-use for crop saving 2% urea spray in 800-1000 lit water Thio urea @ 500 ppm spray Use of anti transpirants	

	Red gravely loam hilly eroded soil	Maize/Urd/ pigeon pea/ca	- Life saving irrigation if possible - Maize should be harvested for baby corn if market is available - Removal of lower leaves in maize/removal of alternate rows in maize for fodder. - In situ mulching of weeds	Rain water harvesting and its re-use for crop saving 2% urea spray in 800-1000 lit water Thio urea @ 500 ppm spray Use of anti transpirants	
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Contingency measures- Irrigated Drought (Irrigated Drought)

Condition		Suggested Contingency measures			
Delayed /limited release of water in canals due to low rainfall	Major farming situation	Crop/cropping system	Change in Crop / Cropping system	Agronomic measures	Remarks on implementation
	Canal/Lift Irrigated areas- Medium to deep brown loamy soil having high rain fall (>700 mm)	Maize- Wheat/Gram/Mustard/B barley-S.Moong Rice-Wheat/gram-S.Moong Blackgram-gram/mustard	Wheat area shifted to Toria/ barley/mustard/gram and multicut fodder crops. Toria: Bhawani, Sangam Mustard: Pusa Agirani Gram: Pratap Chana-1, Dahod Yellow, Barley: RD-2052, RD-2035, RD-2508 Wheat : HI 8498, HI-1500	- Proper basal dose will increase WUE 25% increase in seed rate. - Furrow irrigation/check basin method - Inter cropping gram + barley or barley + mustard/toria - Thiourea spray @ 500 ppm at reproductive phase. - Grow durum wheat varieties - Grow late sown wheat varieties Raj 3077, Raj 3765 - Apply irrigation at critical growth stages - Pluses (Gram) flowering & pod development - Wheat-CRI & flowering	Harvested rain water can be used for sowing

	Medium to shallow red loam hilly skeletal soil having low rain fall (< 700 mm)	Maize- Wheat/Gram/Mustard/B Barley-S.Moong Rice-Wheat/gram-S.Moong Blackgram-gram/mustard	Toria: Bhawani, Sangam Mustard: Pusa Agarani Gram: Pratap Chana-1, Dahod Yellow: Barley: RD-2052, RD-2035, RD-2508 Wheat : HI 8498, HI-1500	• Proper basal dose will increase WUE • 25% increase in seed rate. • Furrow irrigation/check basin method • Inter cropping gram + barley or barley + mustard/toria • Thiourea spray @ 500 ppm at reproductive phase. • Grow durum wheat varieties • Grow late sown wheat varieties Raj 3077, Raj 3765 • Apply irrigation at critical growth stages • Pulses	Harvested rain water can be used for sowing
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Condition			Suggested Contingency measures		
Limited release of water in canals due to low rainfall	Major farming situation	Crop/cropping system	Change in Crop / Cropping system	Agronomic measures	Remarks on implementation

	Canal/Lift Irrigated areas- Medium to deep brown loamy soil having high rain fall (>700 mm)	Maize- Wheat/Gram/Mustard/ Barley-S.Moong Rice-Wheat/gram- S.Moong Blackgram-gram/ mustard	Toria, Mustard, Lin seed, Barley for fodder & safflower instead of wheat Mustard:Lax mi, Pusa Agirani Toria : Bhavani, Sangam Barley: RD- 2052, RD- 2035, RD- 2508	- Sowing with conserved soil moisture in time with short duration varieties of gram - Furrow irrigation/skip furrow irrigation - Use of proper basal dose of fertilizers for higher WUE. - Inter cropping gram + barley or barley + mustard/toria - Thiourea spray @ 500 ppm at reproductive phase. - Apply irrigation at critical growth stages - Chemical weed control should be performed.	Harvested rain water can be used for sowing
	Medium to shallow red loam hilly skeletal soil having low rain fall (< 700 mm)	Maize- Wheat/Gram/Mustard/ Barley-S.Moong Rice-Wheat/gram- S.Moong Blackgram-gram/ mustard	Toria, Mustard, Lin seed, Barley for fodder & safflower instead of rabi maize/wheat Mustard:Lax mi, Pusa Agarani Toria : Bhavani, Sangam Barley: RD- 2052, RD- 2035, RD- 2508	- Sowing with conserved soil moisture in time with short duration varieties of gram - Furrow irrigation/skip furrow irrigation - Use of proper basal dose of fertilizers for higher WUE. - Inter cropping gram + barley or barley + mustard/toria - Thiourea spray @ 500 ppm at reproductive phase. - Apply irrigation at critical growth stages - Chemical weed control should be performed.	Harvested rain water can be used for sowing

Condition			Suggested Contingency measures		
Non-release of water in canals under delayed onset of monsoon in catchment	Major farming situation	Crop/cropping system	Change in Crop / Cropping system	Agronomic measures	Remarks on implementation

	Canal/Lift Irrigated areas- Medium to deep brown loamy soil having high rain fall (>700 mm)	Maize- Wheat/Gram/Mustard/ Barley- S.Moong Rice-Wheat/gram- S.Moong Blackgram-gram/ mustard	Toria, Mustard, Lin seed, Barley for fodder & safflower instead of wheat Mustard:Laxmi, Pusa Agirani Toria : Bhavani, Sangam Barley: RD-2052, RD- 2035, RD-2508 Durum wheat : HI 8498, HI 1500	- Sowing with conserved soil moisture in time with short duration varieties of gram & mustard - Furrow irrigation/skip furrow irrigation - Use of proper basal dose of fertilizers for having higher WUE - Inter cropping gram + barley or barley + mustard/toria - Thiourea spray @ 500 ppm at reproductive phase.	
	Medium to shallow red loam hilly skeletal soil having low rain fall (< 700 mm)	Maize- Wheat/Gram/Mustard/ Barley- S.Moong Rice-Wheat/gram- S.Moong Blackgram-gram/ mustard	Toria, Mustard, Lin seed, Barley for fodder & safflower instead of rabi maize/wheat Mustard:Laxmi, Pusa Agarani Toria : Bhavani, Sangam Barley: RD-2052, RD- 2035, RD-2508	- Sowing with conserved soil moisture in time with short duration varieties of gram - Furrow irrigation/skip furrow irrigation - Use of proper basal dose of fertilizers for higher WUE - Inter cropping gram + barley or barley + mustard/toria - Thiourea spray @ 500 ppm at reproductive phase.	

Condition		Suggested Contingency measures			
Lack of inflows into	Major farming situation	Crop/cropping system	Change in Crop / Cropping system	Agonomic measures	Remarks on implementation

tanks due to insufficient / delayed onset of monsoon	Canal/Lift Irrigated areas- Medium to deep brown loamy soil having high rain fall (>700 mm)	Maize- Wheat/Gram/Mustard/Barley- S.Moong Rice- Wheat/gram- S.Moong Blackgram-gram/mustard	Gram, Barley/toria, Linseed, Safflower Gram-Pratap chana-1, Dahod yellow Toria : Bhavani, Sangam Barley: RD-2052, RD-2035, RD-2508	• Proper basal dose for higher WUE • Life saving irrigation from tank through skip furrow irrigation • Crop mixtures (barley+gram), (gram+mustard). • Apply irrigation at critical growth stages with deficit irrigation • Chemical weed control	
	Medium to shallow red loam hilly skeletal soil having low rain fall (< 700 mm)	Maize- Wheat/Gram/Mustard/Barley- S.Moong Rice- Wheat/gram- S.Moong Blackgram-gram/mustard	Gram, Barley/toria, Linseed, Safflower Gram-Pratap chana-1, Dahod yellow Toria : Bhavani, Sangam Barley: RD-2052, RD-2035, RD-2508	• Proper basal dose for higher WUE • Life saving irrigation from tank through skip furrow irrigation • Crop mixtures (barley+gram), (gram+mustard). • Apply irrigation at critical growth stages with deficit irrigation • Chemical weed control	

Condition			Suggested Contingency measures		
Insufficient groundwater recharge due to low rainfall	Major farming situation	Crop/cropping system	Change in Crop / Cropping system	Agronomic measures	Remarks on implementation
	Canal/Lift Irrigated areas- Medium to deep brown loamy soil having high rain fall (>700 mm)	Maize- Wheat/Gram/Mustard/Barley- S.Moong Rice- Wheat/gram- S.Moong Blackgram-gram/mustard	Rabi crops of low water requirement mustard, toria, barley, gram, lin seed etc may be cultivated instead of wheat Drought tolerant short duration varieties of different crops. Gram-Pratap chana-1, Dahod yellow Toria : Bhavani, Sangam Barley: RD-2052, RD-2035, RD-	• Proper basal dose of fertilizer for higher WUE. • Adopt deficit irrigation or skip row irrigation methods. • Crop mixtures (Barley + Mustard), (Gram + Barley) • Adopting improved method of micro irrigation. • Deep sowing • Irrigation at critical stages • Special care for termite management	

	Medium to shallow red loam hilly skeletal soil having low rain fall (< 700 mm)	Maize- Wheat/Gram/Mustard/Barley-S.Moong Rice-Wheat/gram-S.Moong Blackgram-gram/mustard	Rabi crops of low water requirement mustard, toria, barley, gram, lin seed etc may be cultivated instead of wheat. Drought tolerant varieties of different crops. Gram-Pratap chana-1, Dahod yellow Toria : Bhavani, Sangam Barley: RD-2052, RD-2035, RD-2508 Mustard: Pusa Agarani, Laxmi, Bio-902	• Proper basal dose of fertilizer for higher WUE. • Adopt deficit irrigation or skip row irrigation methods. • Crop mixtures • (Barley + Mustard), (Gram + Barley) • Adopting improved method of micro irrigation. • Eg. Sprinkler & drip irrigation method • Deep sowing • Irrigation at critical stages • Special care for termite management.	
Any other condition(specify)					

Resource management technologies

1. Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during kharif and rabi seasons
2. Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during kharif and rabi
3. Desilting of drainage channel to enhance water availability for providing supplemental irrigation to kharif and rabi crops
4. Farm ponds for lifesaving irrigation to high value rabi crops
5. Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
6. Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
7. Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
8. Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
9. Land levelling in wheat for improving yield and resources utilization
10. Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
11. Continuous contour trenching and bunding in bajra and soybean to overcome water stress during dry spells and to improve crop productivity
12. Application of tank silt for increasing the moisture holding capacity and fertility of the soil
13. Application of gypsum to enhance the productivity and oil content of mustard crops
14. Green manuring in wheat for enhancing the soil nutrient status and crop productivity
15. Compost for improving soil fertility and for increasing crop yields
16. Roof water harvesting in tanks for irrigation and drinking

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	JAIPUR
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	524.3	More than 19%	Less than 424.683
June	66.8		
July	196.6		
August	173.3		
September	87.6		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	241423	Gross irrigated area:	283638
Net Rainfed area	316854	Gross rainfed area	619142

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	1352	1352
Wells	234147	276260
Tanks	23	29
Other sources	5901	5997

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	0	0	
2	Jowar	27385	75	27310
3	Maize	611	77	534
4	Bajra	225959	616	225343
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	58		58
2	Groundnut	41445	20709	20736
3	Sesamum	1517	3	1514
4	Soyabean	1		1
5	Sunflower	-		
6	Castor	-		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	1		1
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	56	56	0
2	Tobacco	1	1	0
3	Guar seed	59232		334
4	Other Fodder crops	8642	8308	334

Crop Plan- Beginning of the season

Early season drought (delayed onset)	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	remarks on Implementation
Delayby4 weeks	Deep brown loamy soil (low rainfall)	Pearl millet-Fallow	Greengram-fallow	Uprooting of weeds& Using them as mulch	Seed source 1.NSSC 2.RSSC 3.NSP
		Clusterbean-Fallow	Cowpea-Fallow	Seed soaking with	
		Greengram-Fallow	Greengram-Fallow		
		Deep dark brown sandy soil (medium rainfall)	Sorghum-Mustard	Greengram-Fallow	
	Urdbean-Mustard		Cowpea-Fallow		
	Sesamum-Gram		Greengram-Fallow		
	Cotton-Wheat				
	Groundnutwheat				
	Medium brown loamy soil(high rainfall)	Pearlmillet-Fallow	Greengram-Fallow		
		Clusterbean-Fallow	Cowpea-Fallow		
		Greengram-Fallow	No change		
		Clusterbean-Fallow	Cowpea-Fallow		
		Greengram-Fallow	Greengram-Fallow		

Contingency measures- Mid season

Condition			Suggested Contingency measures		
Midseason drought (long dry spell, consecutive 2 weeks rainless (>2.5mm))	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient& moisture conservation measures	Remark on Implementation
At vegetative stage	Deep brown loamy soil (low rainfall)	Pearl millet	Removal of alternaterows	Hoeing& weeding to conserve moisture	
		Cluster bean			
	Deep dark brown Sandy soil (medium rainfall)	Sorghum		Spray of thiourea@ 500 ppm to conserve the moisture	
		Sesamum			
		Pigeonpea			
		Cotton			
	Medium brown Loamy soil (high rainfall)	Sorghum			
		Sesamum			
		Pigeonpea			
		Cotton			
Condition			Suggested Contingency measures		
Midseason drought(long	Major Farming situation	Normal Crop /cropping system	Crop management	Soil nutrient&	Remarks on
At flowering/ fruiting stage	Deep brown loamy soil(low rainfall)	Pearl millet	Harvest of Kharif crops and	Do not take rabi crops	
		Sorghum	Using them as fodder		
		Clusterbean			
	Deep dark brown sandy soil (medium rainfall)	Sorghum			
		Sesamum			
		Pigeonpea			

		Cotton			
	Medium brown	Sorghum			
	loamy soil (high rain)	Sesamum			
		Pigeonpea			

		Cotton			
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Contingency measures- End of the season

Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation	Normal Crop/cropping system	Crop management	Rabi Crop planning	Remarks on Implementation
	Deep brown loamy soil (low rain)	Pearl millet-wheat	Harvest at physiological maturity	Do not take rabi crop	Seed source 1.NSSC 2.RSSC 3.NSP 4.Water harvesting structure can be constructed under MANREGA
		Cluster bean			
		Kharif pulses			
	Deep dark brown sandy soil (medium rain)	Sorghum			
		Sesamum			
		Pigeon pea			
		Cotton			
		Medium brown Loamy soil (high rain)		Sorghum	
				Sesamum	
				Pigeon pea	
Cotton					

Contingency measures- drought in Irrigated conditions

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed release of water in canals due to low rainfall: NA	NA				
Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	remarks on Implementation

Limited release overwatering canals due to low rainfall: NA	NA				
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Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropp ing system	Change in crop/cropping system	Agronomic measures	remarks on Implement ation

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	remarks on Implementation
Non release of Water in canals under delayed onset of monsoon in catchment: NA					

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Lack of inflows	Tank bed and	Fallow-Mustard	Fallow-Mustard	Use moisture	
		Fallow-Gram	Fallow-Gram		

Into tanks due to insufficient /delayed onset of monsoon	River	Fallow-Linseed	Fallow-Linseed	conservation techniques Limited irrigation	
		Fallow-Mustard-Watermelon	Fallow-Fallow-Watermelon		
		Fallow-Mustard-Muskmelon	Fallow-Fallow-Muskmelon		
		Fallow-Gram-Cucurbits	Fallow-Fallow-Cucurbits		

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	remarks on Implementation
Insufficient groundwater recharge due to low rainfall	Irrigated Coarse textured soils	Pearl millet-Wheat	Greengram-Mustard	Use recommended practices for fertilizer and weed control	Irrigated Coarse textured soils
		Groundnut-Wheat	Cowpea-Mustard		
		Clusterbean-Barley	Clusterbean-Gram		
	Irrigated Medium textured soils	Cotton-Wheat	Pearlmillet-Barley		
		Groundnut-Wheat	Greengram-Mustard		
		Sorghum-Mustard	Urdbean-Mustard		
Any other condition	Brackish Irrigation	Fallow-Barley	Fallow-Barley	Seed treatment with	Brackish

Condition (specify)			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
	water areas	Fallow-Wheat	Fallow-Fallow	0.1%NaCl	Irrigation water areas

Resource management technologies

1. Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during kharif and rabi seasons
2. Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during kharif and rabi
3. Desilting of drainage channel to enhance water availability for providing supplemental irrigation to kharif and rabi crops
4. Farm ponds for lifesaving irrigation to high value rabi crops
5. Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
6. Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
7. Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
8. Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
9. Land levelling in wheat for improving yield and resources utilization
10. Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
11. Continuous contour trenching and bunding in bajra and soybean to overcome water stress during dry spells and to improve crop productivity
12. Application of tank silt for increasing the moisture holding capacity and fertility of the soil
13. Application of gypsum to enhance the productivity and oil content of mustard crops
14. Green manuring in wheat for enhancing the soil nutrient status and crop productivity
15. Compost for improving soil fertility and for increasing crop yields
16. Roof water harvesting in tanks for irrigation and drinking

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	JAISALMER
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	176.9	More than 19%	Less than 143.289
June	24.6		
July	59		
August	59.5		
September	33.8		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	200863	Gross irrigated area:	549258
Net Rainfed area	642453	Gross rainfed area	682261

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	74807	309794
Wells	126056	239464
Tanks	-	-
Other sources	-	-

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	0	0	
2	Jowar	901	38	863
3	Maize	0		
4	Bajra	145121	17028	128093
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	-		
2	Groundnut	51786	51777	9
3	Sesamum	2633	764	1869
4	Soyabean	-		
5	Sunflower	-		
6	Castor	8128		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	800	799	1
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	-		
2	Tobacco	-		
3	Guar seed	511188		0
4	Other Fodder crops	26429	26429	0

Crop Plan- Beginning of the season

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delay by 4 weeks (Specify month) 2 nd week of August	1 Rainfed (Deep yellowish brown Sandy soils) (low rain)	Bajra - ICMH 356, HHB 67, HHB 60,GHB 538, HHB 67 (I), RHB-177, MPMH-17 Gaur - RGC1017, RGC 936, HG 75, RGC197, RGC1002, RGC1003, RGC-1066 Moth - RMO 40, RMO 435, RMO 423, RMO 225, RMO 257. Mung - SML-668, MUM-2, RMG-62, RMG 268, K-851	1. Reduce area under bajra 2. Bajra be grown for fodder purpose, in small area extra early varieties of bajra HHB 67(I), HHB 67 be grown for food security, Replace bajra by gaur/ moth or mung 3. Moth will be most preferable crop in such type of situations.	Sowing of Bajra at 60 cm row spacing, use rubber wheel of 4.5 kg behind tine to secure good germination, Transplanting of bajra Seedling if available, Timely removal of weeds, clean cultivation & adoption of dust/vegetative mulching. Apply 125% RDF or one spray of 0.50% to 1% NPK in late sown conditions at vegetative stage.	Seed source 1. NSSC 2. RSSC 3. NSP

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
	2 Rainfed (Medium light yellowish brown Loamy soils)	Bajra - ICMH 356, Raj 171, Pusa 605, HHB 67, HHB 60,GHB 538, HHB 67 (I), RHB-177, MPMH-17	1. Reduce area under bajra 2. Bajra be grown for fodder purpose, in small area extra early varieties of bajra HHB	Sowing of Bajra at 60 cm row spacing, Use rubber wheel of 4.5 kg behind tine to secure good germination, Transplanting of bajra seedling if available,	Seed source 1. NSSC 2. RSSC 3. NSP

	(medium rain)	Gaur- RGC1017, RGC 936, HG 75, RGC197, RGC1002, RGC1003, RGC-1066 Moth- RMO 40, RMO 435, RMO 423, RMO 225, RMO 257. Mung- SML-668, MUM-2, RMG-62, RMG 268, K-851	67(I), HHB 67 be grown for food security, Replace bajra by gaur/ moth or mung 3. Moth will be most preferable crop in such type of situations.	Timely removal of weeds, clean cultivation & adoption of dust/ vegetative mulching. Apply 125% RDF or one spray of 0.50% to 1% NPK in late sown conditions at vegetative stage.	
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Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
	3 Rainfed (Other soils) (high rain)	Bajra- ICMH 356, Raj 171, Pusa 605, HHB 67, HHB 60, GHB 538, HHB 67 (I), RHB-177, MPMH-17 Gaur- RGC1017, RGC 936, HG 75, RGC197, RGC1002, RGC1003, RGC-1066 Moth- RMO 40, RMO 435, RMO 423, RMO 225, RMO 257. Mung- SML-668, MUM-2, RMG-62, RMG 268, K-851	1. Reduce area under bajra 2. Bajra be grown for fodder purpose, in small area extra early varieties of bajra HHB 67(I), HHB 67 be grown for food security, Replace bajra by gaur/ moth or mung 3. Moth will be most preferable crop in such type of situations.	Sowing of Bajra at 60 cm row spacing, use rubber wheel of 4.5 kg behind tine to secure good germination, Transplanting of bajra seedling if available, Timely removal of weeds, clean cultivation & adoption of dust/ vegetative mulching. Apply 125% RDF or one spray of 0.50% to 1% NPK in late sown conditions at vegetative stage.	Seed source 1. NSSC 2. RSSC 3. NSP

Contingency measures- Mid season

Condition			Suggested Contingency measures		
Mid-season drought (long dry spell)	Major Farming situation	Crop/cropping system	Crop management	Soil management	Remarks on Implementation
At vegetative stage	1 Rainfed (Deep yellowish		Thinning of plants within the row or removal of alternate	Timely removal of weeds, clean	

	brown Sandy soils) (low rain)		row depending upon situation, Weeding and use of weeds as mulch or fodder for animals. Lifesaving irrigation if possible. Bajra can be harvested for fodder if situation is very severe. Spray of antitranspirant.	cultivation in between intra row spacing & adoption of dust/veg etative mulching.	
	2 Rainfed (Medium light yellowish brown Loamy soils) (medium rain)		Thinning of plants with in the row or removal of alternate row depending upon situation, Weeding and use of weeds as mulch or fodder for animals. Lifesaving irrigation if possible. Bajra can be harvested for fodder if situation is very severe. Spray of antitranspirant.	Timely removal of weeds, clean cultivation in between intra row spacing & adoption of dust/veg etative mulching.	
	3 Rainfed (Other soils) (high rain)		Thinning of plants with in the row or removal of alternate row depending upon situation, Weeding and use of weeds as mulch or fodder for animals. Lifesaving irrigation if possible. Bajra can be harvested for fodder if situation is very severe. Spray of antitranspirant.	Timely removal of weeds, clean cultivation in between intra row spacing & adoption of dust/veg etative mulching.	

Condition			Suggested Contingency measures		
Mid-season drought (long dry spell)	Major Farming situation	Crop/cropping system	Crop management	Soil management	Remarks on Implementation
At reproductive stage	1 Rainfed (Deep yellowish brown Sandy soils) (low rain)		Removal of alternate rows, if situation is very severe Bajra can be harvested for fodder and intercrop be allowed to grow, Spray of antitranspirant. Removal of lower leaves to check the transpiration losses.	Weeding and dust mulching, Lifesaving irrigation if possible.	
	2 Rainfed (Medium light yellowish brown Loamy soils) (medium rain)		Removal of alternate rows, if situation is very severe Bajra can be harvested for fodder and intercrop be allowed to grow, Spray of antitranspirant. Removal of lower leaves to check the transpiration losses.	Weeding and dust mulching, Lifesaving irrigation if possible.	
	3 Rainfed (Other soils) (high rain)		Removal of alternate rows, if situation is very severe Bajra can be harvested for fodder and intercrop be allowed to	Weeding and dust mulching, Lifesaving irrigation if	

		grow, Spray of antitranspirant. Removal of lower leaves to check the transpiration losses.	possible.	
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Contingency measures- End of the season

Condition			Suggested Contingency measures		
Terminal Drought	Major Farming situation	Crop/cropping system	Crop management	Soil management	Remarks on Implementation
	1 Rainfed (Deep yellowish-brown Sandy soils) (low rain)		Dust mulching, Lifesaving irrigation if possible. Reduce the drought, moisture conservation by plant population depending on the period of draught, Removal of alternate row of Bajra for fodder, If stress is severe. Complete harvesting of bajra as fodder/hay/silage.	If kharif crop is harvested for fodder for severely affected by drought, moisture conservation by compartmental bunding of field and deep ploughing for conserving moisture in the soil for sowing of rainfed rabi crop mustard, taramira, gram from 15 Sept. onwards should be started.	
	2 Rainfed (Medium light yellowish brown Loamy soils) (medium rain)		Dust mulching, Lifesaving irrigation if possible. Reduce the drought, moisture conservation by plant population depending on the period of draught, Removal of alternate row of Bajra for fodder, If stress is severe. Complete harvesting of bajra as fodder/hay/silage.	If kharif crop is harvested for fodder for severely affected by drought, moisture conservation by compartmental bunding of field and deep ploughing for conserving moisture in the soil for sowing of rainfed rabi crop mustard, taramira, gram from 15 Sept. onwards should be started.	

Condition			Suggested Contingency measures		
Terminal Drought	Major Farming situation	Crop/cropping system	Crop management	Soil management	Remarks on Implementation

	3 Rainfed (Other soils) (high rain)		Dust mulching, Lifesaving irrigation if possible. Reduce the plant population depending on the period of draught, Removal of alternate row of Bajra for fodder, If stress is severe. Complete harvesting of bajra as fodder/hay/silage.	If kharif crop is harvested for fodder or severely affected by drought, moisture conservation by compartmental bunding of field and deep ploughing for conserving moisture in the soil for sowing of rainfed rabi crop mustard, taramira, gram from 15 Sept. onwards should be started.	
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Contingency measures- Irrigated Systems drought

Condition	Major Farming situation ^f	Crop/cropping system ^g	Suggested Contingency measures		
			Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Delayed/ limited release of water in canals due to low rainfall	Cannal Irrigated area	Ground nut-HNG-10, HNG-123, TG 37 A, TBG 39	Short duration varieties of groundnut like TG 37 A or TBG 39 be preferred in case of delayed release. In limited water condition irrigated cluster bean be grown.	Water be applied through sprinkler irrigation, In case of limited water it should be applied at critical stage. Timely removal of weeds, clean cultivation in between intra row spacing & adoption of dust/ vegetative mulching, Spray of thiourea @ 500 ppm in guar. Alternate furrow irrigation in cotton be practiced.	Nil
		Cluster bean-RGC-986, RGC 1017, RGC 1066, RGC 1003			
		Cotton in small area			

Condition	Major Farming situation ^f	Crop/cropping system ^g	Suggested Contingency measures		
			Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Non-release of water in canals under delayed onset of monsoon in catchment	Cannal irrigated areas	Ground nut-HNG-10, HNG-123, TG 37 A, TBG 39	Short duration varieties of groundnut like TG 37 A or TBG 39 be preferred in case of delayed release. In limited water condition irrigated cluster bean be grown. Rainfed crops like Bajra and Moth may be grown under this situation.	Water be applied through sprinkler irrigation, In case of limited water it should be applied at critical stage. Timely removal of weeds, clean cultivation in between intra row spacing & adoption of dust/ vegetative mulching, Spray of thiourea @ 500 ppm in guar. Alternate furrow irrigation in cotton be practiced.	Nil
		Cluster bean-RGC-986, RGC 1017, RGC 1066, RGC 1003			
		Cotton in small area			

Resource management technologies

- Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during kharif and rabi seasons

- Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during kharif and rabi
- Desilting of drainage channel to enhance water availability for providing supplemental irrigation to kharif and rabi crops
- Farm ponds for lifesaving irrigation to high value rabi crops
- Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
- Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
- Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
- Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
- Land levelling in wheat for improving yield and resources utilization
- Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
- Continuous contour trenching and bunding in bajra and soybean to overcome water stress during dry spells and to improve crop productivity
- Application of tank silt for increasing the moisture holding capacity and fertility of the soil
- Application of gypsum to enhance the productivity and oil content of mustard crops
- Green manuring in wheat for enhancing the soil nutrient status and crop productivity
- Compost for improving soil fertility and for increasing crop yields
- Roof water harvesting in tanks for irrigation and drinking

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	JALOR
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	417.8	More than 19%	Less than 338.418
June	40.3		
July	166.4		
August	134.3		
September	76.8		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	422022	Gross irrigated area:	526801
Net Rainfed area	262184	Gross rainfed area	540321

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	126759	150332
Wells	295231	376437
Tanks	-	-
Other sources	32	32

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	0	0	
2	Jowar	1871	47	1824
3	Maize	52	42	10
4	Bajra	320167	22207	297960
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	-		
2	Groundnut	43163	42662	501
3	Sesamum	11767	60	11707
4	Soyabean	-		
5	Sunflower	-		
6	Castor	76979		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	1110	1104	6
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	-		
2	Tobacco	124	124	0
3	Guar seed	38541		290
4	Other Fodder crops	5610	5320	290

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Delay by 4 weeks (4 th week of July)	Rainfed normal	Bajra	No change, Prefer var. of Hybrids: RHB-121, GHB-538, GHB-719, HHB-67, HHB-67 Imp., ICMH-356 Composite: CZP 9802	Seed soaking in thiourea 500 ppm for 6-8 hrs followed by drying for 3-4 hrs at room temp. in shade before sowing; No change in other standard agronomic practices	Link SAU ,RSSC ,and NSC for good quality seed Link also NFSM, RKVY for thio urea
		Sesame	No change, Prefer var. of T-46, RT-125, RT-127, RT-346	No change in standard agronomic practices	
		Mungbean	No change, Prefer var. of SML-668, G-4, RMG-62, RMG-268, RMG-344, RMG-492	No change in standard agronomic practices	
		Guar	No change, Prefer var. of RGC-936 , RGC-1002, RGC- 1017, RGC-1038, RGC-1055, RGC-1066, RGM-112	Seed soaking in thiourea 500 ppm for 3-4 hrs before sowing; No change in other standard agronomic practices	
		Mothbean	No change, Prefer var. of RMO-40, RMO-257, RMO-435	No change in standard agronomic practices	
	Rainfed problematic soil	Bajra	No change, Prefer var. of RHB-121, GHB-538, GHB-719, HHB-67 Imp., ICMH-356	Seed soaking in thiourea 500 ppm for 6-8 hrs followed by drying for 3-4 hrs at room temp. in shade before sowing, Increase seed rate by 25%; No change in other standard agronomic practices	
		Sesame	No change, Prefer var. of RT -46, RT-125, RT-127, RT-346	Increase seed rate by 25%; No change in other standard agronomic practices	

		Guar	No change, Prefer var. of RGC-936 , RGC-1002, RGC- 1017, RGC-1066 , RGM-112	Seed soaking in thiourea 500 ppm for 3-4 hrs before sowing; Increase seed rate by 25%; No change in other standard agronomic practices	
		Fodder Sorghum	No change, Prefer var. of Raj chari-1, Raj Chari-2, M P Chari	Increase seed rate by 25%; No change in other standard agronomic practices	

Condition			Suggested Contingency measures		
Mid season drought	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
At vegetative stage	Rainfed normal soil	Bajra	Thinning of plants by 25%	- Spray of 1000 ppm of thiourea in pearl millet and 500 ppm in guar - Life saving irrigation by harvested rain water - In-situ mulching of weeds - Spraying of 2% urea after the dry spell at optimum moisture or - Top dressing Of 10-15kg N/ha to gain lost vigor	Link MNAREGA, for the support of Water harvesting structures and RKVY or NFSM for Improved implement of hoeing & weeding
		Sesame	Hoeing for weed control	-do-	
		Mungbean	-do-	-do-	
		Guar	-do-	- Spray of 1000 ppm of thiourea 500 ppm in guar - Life saving irrigation - Spray 2% urea after relief of dry spell	
		Moth bean	-do-	-do-	
			-do-	-do-	
	Rainfed problematic soil	Bajra	Thinning of plants by 25% Hoeing for weed control	- Spray of 1000 ppm of thiourea in pearl millet and 500 ppm in guar - Life saving irrigation by harvested rain water - In-situ mulching of weeds - Spraying of 2% urea after the dry spell at optimum moisture or - Top dressing Of 10-15kg N/ha to gain lost vigor	
		Sesame	Hoeing for weed control		

		Guar	-do-	- Spray of 1000 ppm of thiourea 500 ppm in guar - Life saving irrigation - Spray 2% urea after relief of dry spell	
		Sorghum	-do-	-do-	

Condition			Suggested Contingency measures		
Mid season drought (long dry spell)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measues	Remarks on Implementation
At flowering/ fruiting stage	Rainfed normal soil	Bajra	Thinning of plants by 50% by removal of alternate row/plant in bajra Hoeing for weed and moisture management	Spray of 1000 ppm of thiourea in Pearl millet and 500 ppm in guar Life saving irrigation by harvested rain water Green/organic mulch in crop rows Spray 2% urea after relief of dry spell	Water harvesting structures under MNAREGA, RKVY, etc Improved implement for hoeing & weeding under RKVY or NFSM, etc
		Sesame	-do-	-do-	
		Mungbean,	-do-	-do-	
		Guar	-do-	-do-	
		Mothbean	-do-	-do-	
	Rainfed problematic soil	Bajra	If the damage will be severe, harvest for fodder and plan for rabi crop like Taramira	Spray of 1000 ppm of thiourea Life saving irrigation by harvested rain water	
		Sesame		-do-	
		Sesame		-do-	
		Guar		Spray of 500 ppm of thio urea in guar Life saving irrigation	
		Sorghum		-do-	

Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measues	Remarks on Implementation

	Rainfed normal soil	Bajra, ,	If the damage will be severe, harvest for fodder and residual moisture be utilized for rabi crop like Taramira	Spray of 1000 ppm of thiourea guar Life saving irrigation from farm pond water	Water harvesting structures under MNAREGA, RKVY, etc Seed supply by RSSC/NSC
		Sesame	-do-	Life saving irrigation from farm pond water	
		Mungbean	-do-	Life saving irrigation from farm pond water	
		Mothbean	-do-	Life saving irrigation from farm pond water	
	Rainfed problematic soil	Bajra,	If the damage will be severe, harvest for fodder and residual moisture be utilized for rabi crop like Taramira	Spray of 1000 ppm of thiourea Life saving irrigation by harvested rain water	
		Sesame		Life saving irrigation by harvested rain water	
		Guar		Spray of 500 ppm of thiourea Life saving irrigation by harvested rain water	
		Sorghum		Life saving irrigation by harvested rain water	

Drought - Irrigated situation

Condition		Kharif season crop	Suggested Contingency measures		
		Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed release of water in canals due to low rainfall	Major Farming situation				
	Irrigated normal soil and water	Castor	Suitable hybrids/varieties Hybrids RHC-1, GCH-4, GCH-5, GCH-7 Varieties DCS-9, 48-1 (Jwala)	Hoeing for weed and moisture management; In-situ mulching of weeds. No change in other standard agronomic practices	Improved implement for hoeing & weeding under RKVY or NFSM, etc

Condition		Rabi season crops	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed release of water in canals due to low rainfall	Irrigated normal soil and water	Wheat	Short Duration Varieties Wheat- Raj-4083, Raj 3777, Lok-1	Seed soaking in thiourea 500 ppm for 6-8 hours Irrigation at critical crop growth stages Collection and use of rainwater in water harvesting structures Mulching in crop rows No change in other standard agronomic practices	Improved implement for hoeing & weeding and bioregulator thiourea under RKVY or NFSM, etc
		Mustard	Mustard: Urvashi, RRN-505, Bio-902, GM-2	Seed soaking in thiourea 500 ppm for 3-4 hours Irrigation at critical crop growth stages Mulching in crop rows Collection, storage and use of rain water for irrigation	
		Cumin	Cumin- RZ-19, RZ-223, GC-4	Irrigation at critical crop growth stages Mulching in crop rows	
		Gram	Gram- RSG-973, RSG-888	Seed soaking in thiourea 500 ppm for 6-8 hours Irrigation at critical crop growth stages Mulching in crop rows	
		Isabgol	Isabgol- RI-89, RI-1	Irrigation at critical crop growth stages Mulching in crop rows	

Condition		Kharif season crop	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Limited release of water in canals due	Irrigated normal soil and water	Castor	Hybrids RHC-1, GCH-4, GCH-5, GCH-7	Hoeing for weed and moisture management	Improved implement for hoeing & weeding and bio-

Condition		Kharif season crop	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
to low rainfall			Varieties DCS-9, 48-1 (Jwala)	In-situ mulching of weeds. No change in other standard agronomic practices	regulator thiourea under RKVY or NFSM, etc
	Irrigated normal soil and water	Gram	Gram- RSG-973, RSG-888	Hoeing for weed and moisture management; In-situ mulching of weeds Sprinkler irrigation for efficient use of water; Irrigation at critical crop growth stages; Spray of thiourea 500 ppm in gram at reproductive stage	
		Mustard	Mustard: Urvashi, RRN-505, Bio-902	Hoeing for weed and moisture management; In-situ mulching of weeds. Sprinkler irrigation for efficient use of water; Irrigation at critical stages; Spray of thiourea 1000 in mustard at reproductive stage	
		Taramira	Taramira: RTM-314, T-27	Sprinkler irrigation for efficient use of water; Irrigation at critical crop growth stages stages	

Condition		Kharif season crops	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non release of water in canals under delayed onset of monsoon in catchment	Rainfed normal soil	Castor	Castor hybrids RHC-1, GCH-4, GCH-5, GCH-7 Castor varieties DCS-9, 48-1 (Jwala)	Hoeing for weed and moisture management; In-situ mulching of weeds. No change in other standard agronomic practices	Link RSSC/SAU, etc for supply of seed Link RKVY or NFSM, et for Improved implements (hoeing & weeding under)
	Rainfed problematic soil	Castor	-do-	-do-	

Condition		Rabi season crops	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non release of water in canals under delayed onset of monsoon in catchment	Rainfed normal soil	If soil moisture is sufficient due to late rains then prefer mustard	Mustard: Urvashi, RRN-505, Bio-902	Timely weed management Thiourea spray1000 at reproductive stage Critical irrigation from rainwater collected in water harvesting structures	If pond is available irrigation at critical stages may be done by harvested water; bio-regulator thiourea under RKVY or NFSM, etc Link watersheds NREGS for support of waterharvesting structures
			Gram- RSG-973, RSG-888	Thiourea spray1000 500 ppm at reproductive stage Critical irrigation from rainwater collected in water harvesting structures	

Condition		Rabi season crops	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
		taramira, gram	Taramira: RTM-314, T-27	Timely weed management Critical irrigation from rainwater collected in water harvesting structure	
	Rainfed problematic soil	Taramira	RTM-314, T-27	Timely weed management Critical irrigation from rainwater collected in water harvesting structures	

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	N A				

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Insufficient groundwater recharge due to low rainfall	Irrigated normal soil and water	Wheat,	Less water requiring crop be cultivated	- Timely hoeing and weeding - Irrigation at critical stages by sprinklers - Crop diversification through horticultural crops	Percolation tanks may be dugout through NREGA
		Cumin,	Cumin: RZ-19, GC-4, RZ-223	Spray of thiourea 500 ppm Timely hoeing and weeding	

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
				- Irrigation at critical stages by sprinklers - Crop diversification through horticultural crops	
		Isabgol,	Isabgol: RI-89	- Timely hoeing and weeding - Irrigation at critical stages by sprinklers - Crop diversification through horticultural crops	
		Mustard	Mustard: Urvashi, RRN-505, Bio-902, JM-1, GM-2	Spray of thiourea 1000 ppm	
		Gram	Gram: RSG-888, RSG-973	- Life saving irrigarion at crtical crop growth stages - Irrigation through sprinklers - Spray thio urea 500ppm	
	Irrigated problematic soil and water	Cumin	Cumin: RZ-19, GC-4, RZ-223	- Timely hoeing and weeding - In-situ mulching by weeds - Irrigation at critical stages by sprinklers - Spray of thiourea 1000 ppm in mustard	
		Isabgol	Isabgol: RI-89	-do-	
		Mustard	Mustard: Urvashi, RRN-505, Bio-902, JM-1, GM-2	-do-	

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	JHALAWAR
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	884.3	More than 19%	Less than 716.283
June	105		
July	293.9		
August	316		
September	169.4		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	333320	Gross irrigated area:	355855
Net Rainfed area	14206	Gross rainfed area	327179

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	13742	13758
Wells	310502	332698
Tanks	581	595
Other sources	8495	8804

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	8643	8484	159
2	Jowar	145	-	
3	Maize	34943		34943
4	Bajra	18		18
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	39		39
2	Groundnut	348		348
3	Sesamum	269	107	162
4	Soyabean	283901		283901
5	Sunflower	-		
6	Castor	-		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	-		
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	2	2	0
2	Tobacco	-		
3	Guar seed	2		214
4	Other Fodder crops	2951	2737	214

Crop Plan- Beginning of the season

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop / Cropping system	Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Delay by 4 weeks (4 th week of July)	Rainfed normal	Bajra	No change, Prefer var. of Hybrids: RHB-121, GHB-538, GHB-719, HHB-67, HHB-67 Imp., ICMH-356 Composite: CZP 9802	Seed soaking in thiourea 500 ppm for 6-8 hrs. followed by drying for 3-4 hrs. at room temp. in shade before sowing; No change in other standard agronomic practices	Link SAU, RSSC ,and NSC for good quality seed Link also NFSM, RKVY for thio urea
		Sesame	No change, Prefer var. of T-46, RT-125, RT-127, RT-346	No change in standard agronomic practices	
		Mungbean	No change, Prefer var. of SML-668, G-4, RMG-62, RMG-268, RMG-344, RMG-492	No change in standard agronomic practices	
		Guar	No change, Prefer var. of RGC-936 , RGC-1002, RGC- 1017, RGC-1038, RGC-1055, RGC-1066, RGM-112	Seed soaking in thiourea 500 ppm for 3-4 hrs. before sowing; No change in other standard agronomic practices	
		Mothbean	No change, Prefer var. of RMO-40, RMO-257, RMO-435	No change in standard agronomic practices	
	Rainfed problematic soil	Bajra	No change, Prefer var. of RHB-121, GHB-538, GHB-719, HHB-67 Imp., ICMH-356	Seed soaking in thiourea 500 ppm for 6-8 hrs. followed by drying for 3-4 hrs. at room temp. in shade before sowing, Increase seed rate by 25%;	

				No change in other standard agronomic practices	
		Sesame	No change, Prefer var. of RT -46, RT- 125, RT-127, RT-346	Increase seed rate by 25%; No change in other standard agronomic practices	
		Guar	No change, Prefer var. of RGC-936 , RGC-1002, RGC- 1017, RGC-1066 , RGM-112	Seed soaking in thiourea 500 ppm for 3-4 hrs. before sowing; Increase seed rate by 25%; No change in other standard agronomic practices	
		Fodder Sorghum	No change, Prefer var. of Raj chari-1, Raj Chari-2, M P Chari	Increase seed rate by 25%; No change in other standard agronomic practices	

Contingency measures- Mid season

Condition			Suggested Contingency measures		
Mid-season drought	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
At vegetative stage	Rainfed normal soil	Bajra	Thinning of plants by 25%	- Spray of 1000 ppm of thiourea in pearl millet and 500 ppm in guar - Lifesaving irrigation by harvested rain water - In-situ mulching of weeds - Spraying of 2% urea after the dry spell at optimum moisture or - Top dressing of 10-15kg N/ha to gain lost vigor	Link MNAREGA, for the support of Water harvesting structures and RKVY or NFSM for Improved implement of hoeing & weeding
		Sesame	Hoeing for weed control	-do-	
		Mungbean	-do-	-do-	

		Guar	-do-	- Spray of 1000 ppm of thiourea 500 ppm in guar - Lifesaving irrigation - Spray 2% urea after relief of dry spell	
		Moth bean	-do-	-do-	
			-do-	-do-	
	Rainfed problematic soil	Bajra	Thinning of plants by 25% Hoeing for weed control	- Spray of 1000 ppm of thiourea in pearl millet and 500 ppm in guar - Lifesaving irrigation by harvested rain water - In-situ mulching of weeds - Spraying of 2% urea after the dry spell at optimum moisture or - Top dressing of 10-15kg N/ha to gain lost vigor	
		Sesame	Hoeing for weed control		
		Guar	-do-	- Spray of 1000 ppm of thiourea 500 ppm in guar - Lifesaving irrigation - Spray 2% urea after relief of dry spell	
		Sorghum	-do-	-do-	

Condition			Suggested Contingency measures		
Mid season drought (long dry spell)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
At flowering/ fruiting stage	Rainfed normal soil	Bajra	Thinning of plants by 50% by removal of alternate row/plant in bajra Hoeing for weed and moisture management	Spray of 1000 ppm of thiourea in Pearl millet and 500 ppm in guar Lifesaving irrigation by harvested rain water Green/organic mulch in crop rows Spray 2% urea after relief of dry spell	Water harvesting structures under MNAREGA, RKVY, etc Improved implement for hoeing & weeding under RKVY or NFSM, etc
		Sesame	-do-	-do-	

		Mungbean,	-do-	-do-	
		Guar	-do-	-do-	
		Mothbean	-do-	-do-	
	Rainfed problematic soil	Bajra	If the damage will be severe, harvest for fodder and plan for rabi crop like Taramira	Spray of 1000 ppm of thiourea Lifesaving irrigation by harvested rain water	
		Sesame		-do-	
		Sesame		-do-	
		Guar		Spray of 500 ppm of thio urea in guar Lifesaving irrigation	
		Sorghum		-do-	

Contingency measures- End of the season

Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measues	Remarks on Implementation
	Rainfed normal soil	Bajra	If the damage will be severe, harvest for fodder and residual moisture be utilized for rabi crop like Taramira	Spray of 1000 ppm of thiourea guar Lifesaving irrigation from farm pond water	Water harvesting structures under MNAREGA, RKVY, etc Seed supply by RSSC/NSC
		Sesame	-do-	Lifesaving irrigation from farm pond water	
		Mungbean	-do-	Lifesaving irrigation from farm pond water	
		Mothbean	-do-	Lifesaving irrigation from farm pond water	
	Rainfed problematic soil	Bajra,	If the damage will be severe, harvest for fodder and residual moisture be utilized for rabi crop like Taramira	Spray of 1000 ppm of thiourea Lifesaving irrigation by harvested rain water	
		Sesame		Lifesaving irrigation by harvested rain water	
		Guar		Spray of 500 ppm of thiourea Lifesaving irrigation by harvested rain water	
		Sorghum		Lifesaving irrigation by harvested rain water	

Contingency measures- Irrigated Drought

Condition		Kharif season crop	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed release of water in canals due to low rainfall	Irrigated normal soil and water	Castor	Suitable hybrids/varieties Hybrids RHC-1, GCH-4, GCH-5, GCH-7 Varieties DCS-9, 48-1 (Jwala)	Hoeing for weed and moisture management; In-situ mulching of weeds. No change in other standard agronomic practices	Improved implement for hoeing & weeding under RKVY or NFSM, etc

Condition		Rabi season crops	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed release of water in canals due to low rainfall	Irrigated normal soil and water	Wheat	Short Duration Varieties Wheat- Raj-4083, Raj 3777, Lok-1	Seed soaking in thiourea 500 ppm for 6-8 hours Irrigation at critical crop growth stages Collection and use of rainwater in water harvesting structures Mulching in crop rows No change in other standard agronomic practices	Improved implement for hoeing & weeding and bioregulator thiourea under RKVY or NFSM, etc
		Mustard	Mustard: Urvashi, RRN-505, Bio-902, GM-2	Seed soaking in thiourea 500 ppm for 3-4 hours Irrigation at critical crop growth stages Mulching in crop rows Collection, storage and use of rain water for irrigation	
		Cumin	Cumin- RZ-19, RZ-223, GC-4	Irrigation at critical crop growth stages Mulching in crop rows	
		Gram	Gram- RSG-973, RSG-888	Seed soaking in thiourea 500 ppm for 6-8 hours Irrigation at critical crop growth stages Mulching in crop rows	
		Isabgol	Isabgol- RI-89, RI-1	Irrigation at critical crop growth stages Mulching in crop rows	

Condition		Kharif season crop	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Limited release of water in canals due to low rainfall	Irrigated normal soil and water	Castor	Hybrids RHC-1, GCH-4, GCH-5, GCH-7 Varieties DCS-9, 48-1 (Jwala)	Hoeing for weed and moisture management In-situ mulching of weeds. No change in other standard agronomic practices	Improved implement for hoeing & weeding and bio-regulator thiourea under RKVY or NFSM, etc
	Irrigated normal soil and water	Gram	Gram- RSG-973, RSG-888	Hoeing for weed and moisture management; In-situ mulching of weeds Sprinkler irrigation for efficient use of water; Irrigation at critical crop growth stages; Spray of thiourea 500 ppm in gram at reproductive stage	
		Mustard	Mustard: Urvashi, RRN-505, Bio-902	Hoeing for weed and moisture management; In-situ mulching of weeds. Sprinkler irrigation for efficient use of water; Irrigation at critical stages; Spray of thiourea 1000 in mustard at reproductive stage	
		Taramira	Taramira: RTM-314, T-27	Sprinkler irrigation for efficient use of water; Irrigation at critical crop growth stages	

Condition		Kharif season crops	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non-release of water in canals under delayed onset of monsoon in catchment	Rainfed normal soil	Castor	Castor hybrids RHC-1, GCH-4, GCH-5, GCH-7 Castor varieties DCS-9, 48-1 (Jwala)	Hoeing for weed and moisture management; In-situ mulching of weeds.	Link RSSC/SAU, etc for supply of seed Link RKVY or NFSM, et for Improved

Condition		Kharif season crops	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
				No change in other standard agronomic practices	implements (hoeing & weeding under)
	Rainfed problematic soil	Castor	-do-	-do-	

Condition		Rabi season crops	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non-release of water in canals under delayed onset of monsoon in catchment	Rainfed normal soil	If soil moisture is sufficient due to late rains then prefer mustard	Mustard: Urvashi, RRN-505, Bio-902	Timely weed management Thiourea spray1000 at reproductive stage Critical irrigation from rainwater collected in water harvesting structures	If pond is available irrigation at critical stages may be done by harvested water; bio-regulator thiourea under RKVY or NFSM, etc Link watersheds NREGS for support of water harvesting structures
			Gram- RSG-973, RSG-888	Thiourea spray1000 500 ppm at reproductive stage Critical irrigation from rainwater collected in water harvesting structures	
		taramira, gram	Taramira: RTM-314, T-27	Timely weed management Critical irrigation from rainwater collected in water harvesting structure	
	Rainfed problematic soil	Taramira	RTM-314, T-27	Timely weed management Critical irrigation from rainwater collected in water harvesting structures	

Condition		Kharif season crops	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non-release of water in canals under delayed onset of monsoon in catchment	Rainfed normal soil	Castor	Castor hybrids RHC-1, GCH-4, GCH-5, GCH-7 Castor varieties DCS-9, 48-1 (Jwala)	Hoeing for weed and moisture management; In-situ mulching of weeds. No change in other standard agronomic practices	Link RSSC/SAU, etc for supply of seed Link RKVY or NFSM, et for Improved implements (hoeing & weeding under)
	Rainfed problematic soil	Castor	-do-	-do-	

Condition		Rabi season crops	Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non-release of water in canals under delayed onset of monsoon in catchment	Rainfed normal soil	If soil moisture is sufficient due to late rains then prefer mustard	Mustard: Urvashi, RRN-505, Bio-902	Timely weed management Thiourea spray1000 at reproductive stage Critical irrigation from rainwater collected in water harvesting structures	If pond is available irrigation at critical stages may be done by harvested water; bio-regulator thiourea under RKVY or NFSM, etc Link watersheds NREGS for support of waterharvesting structures
			Gram- RSG-973, RSG-888	Thiourea spray1000 500 ppm at reproductive stage Critical irrigation from rainwater collected in water harvesting structures	
		taramira, gram	Taramira: RTM-314, T-27	Timely weed management Critical irrigation from rainwater collected in water harvesting structure	
	Rainfed problematic soil	Taramira	RTM-314, T-27	Timely weed management Critical irrigation from rainwater collected in water harvesting structures	

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	N A				

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Insufficient groundwater recharge due to low rainfall	Irrigated normal soil and water	Wheat,	Less water requiring crop be cultivated	- Timely hoeing and weeding - Irrigation at critical stages by sprinklers - Crop diversification through horticultural crops	Percolation tanks may be dugout through NREGA
		Cumin,	Cumin: RZ-19, GC-4, RZ-223	- Spray of thiourea 500 ppm - Timely hoeing and weeding - Irrigation at critical stages by sprinklers - Crop diversification through horticultural crops	
		Isabgol,	Isabgol: RI-89	- Timely hoeing and weeding - Irrigation at critical stages by sprinklers - Crop diversification through horticultural crops	
		Mustard	Mustard: Urvashi, RRN-505, Bio-902, JM-1, GM-2	Spray of thiourea 1000 ppm	
		Gram	Gram: RSG-888, RSG-973	- Lifesaving irrigation at critical crop growth stages - Irrigation through sprinklers - Spray thio urea 500ppm	
	Irrigated problematic soil and water	Cumin	Cumin: RZ-19, GC-4, RZ-223	- Timely hoeing and weeding - In-situ mulching by weeds	

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
				- Irrigation at critical stages by sprinklers - Spray of thiourea 1000 ppm in mustard	
		Isabgol	Isabgol: RI-89	-do-	
		Mustard	Mustard: Urvashi, RRN-505, Bio-902, JM-1, GM-2	-do-	

Resource management technologies

- Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during kharif and rabi seasons
- Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during kharif and rabi
- Desilting of drainage channel to enhance water availability for providing supplemental irrigation to kharif and rabi crops
- Farm ponds for lifesaving irrigation to high value rabi crops
- Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
- Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
- Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
- Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
- Land levelling in wheat for improving yield and resources utilization
- Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
- Continuous contour trenching and bunding in bajra and soybean to overcome water stress during dry spells and to improve crop productivity
- Application of tank silt for increasing the moisture holding capacity and fertility of the soil
- Application of gypsum to enhance the productivity and oil content of mustard crops
- Green manuring in wheat for enhancing the soil nutrient status and crop productivity
- Compost for improving soil fertility and for increasing crop yields
- Roof water harvesting in tanks for irrigation and drinking

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	JHUNJHUNUN
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	408.8	More than 19%	Less than 331.128
June	65.1		
July	145.9		
August	128.8		
September	69		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	237409	Gross irrigated area:	278198
Net Rainfed area	95631	Gross rainfed area	302117

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	-	-
Wells	237409	278198
Tanks	-	-
Other sources	-	-

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	0	0	
2	Jowar	76	3	73
3	Maize	2		2
4	Bajra	158298	77	158221
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	-		
2	Groundnut	14342	14321	21
3	Sesamum	102		102
4	Soyabean	-		
5	Sunflower	-		
6	Castor	190		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	20930	20918	12
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	-		
2	Tobacco	11	11	0
3	Guar seed	49807		0
4	Other Fodder crops	5087	5087	0

Crop Plan- Beginning of the season

Condition	Suggested Contingency measures				
Early season drought delayed onset	Major farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on implementation
Delayed by 4 week (4 th wk July)	1. Deep yellowish brown sandy soil (high rainfall area)	Pearl millet	Varieties-HHB-67, HHB-60 or Replace with cluster bean variety RGC-936 or RGC-1002 Cowpea variety RC-101 or RC-19 Moth bean Variety RMO-40, RMO-435	1. Basal dose of RDF (90-40-0) including FYM 2. Soil/Straw mulch after 15-20 DAS 3. Weed free field.	Seed source 1. NSSC 2. RSSC 3. NSP
		Cluster bean	RGC-936,	1. Basal dose of RDF (20-40-0) 2. Weed free field.	-do-
		Cowpea	RC-101	1. Basal dose of RDF (20-40-0) 2. Weed free field and dust mulching.	-do-
		Moong	RMG-62, RMG-268	1. Basal dose of RDF (20-40-0) 2. Weed free field and dust mulching.	-do-
		Moth bean	RMO-40, RMO-435,	1. Basal dose of RDF (20-40-0) 2. Weed free field and dust mulching.	-do-
				2. Weed free field and dust mulching.	
	2. Deep dark brown sandy soil (Low rainfall area)	Pearl millet	Varieties-HHB-67, HHB-60 or Replace with cluster bean variety RGC-936 or Cowpea variety RC-101 or Moth bean Variety RMO-40, RMO-435	1. Seed treatment with thiourea @ 1000 ppm in pearl millet and @ 500 ppm in moth and cluster bean 2. Basal dose of RDF including FYM 3. Soil/Straw mulch after 15-20 DAS 4. Weed free field.	Seed source 1. NSSC 2. RSSC 3. NSP
		Cluster bean	RGC-936,	1. Seed treatment with thiourea @ 500 ppm	-do-

				2.Basaldoseof RDF 3.Weedfreefield.	
		Cowpea	RC-101,RC-19	1.Basaldoseof RDF 2.Weedfreefieldand dustmulching.	-do-
		Moong	RMG-62, RMG-268	1.Basaldoseof RDF 2.Weedfreefieldand dustmulching.	-do-
		Mothbean	RMO-40, RMO-435,	1..BasaldoseofRDF 2.Weedfreefieldand dustmulching.	-do-
	3.Rainfedother soils	Pearlmillet	Varieties-HHB-67, HHB- 60 or Replace withclusterbeanvariety RGC-936orCowpea varietyRC-101or MothbeanVariety RMO-40,RMo-435	1. .Basaldoseof RDF 2. Weedfreefieldand dust mulching.	Source 1.NSSC 2.RSSC 3.NSP
		Clusterbean	RGC-936,	-do-	-do-
		Cowpea	RC-101	-do-	-do-
		Moong	RMG-62, RMG-268	-do-	-do-
		Mothbean	RMO-40, RMO-435,	Weedfreefieldand dustmulching.	-do-

Contingency measures- Mid season

Condition	SuggestedContingencymeasures				
Midseasondrought (Long dry spell, Consecutive two weeksrainless	Major farming situation	Crop /cropping system	Crop management	Soilnutrientand moisture conservation measures	Remarks on implementation
Atvegetativestage	1. Deep yellowish brownsandysoil (high rainfall area)	Pearlmillet	1. Weedfree 2. Lifesaving irrigation if available 3.Removealternate row 4.Ridge and furrowmaking	1. Hoeingand weeding 2. Lifesaving irrigation on criticalstages	Seedsource 1.NSSC 2. RSSC 3. NSP 4. Waterharvesting structure can be constructed under MANREGA
		Clusterbean	1. Weedfree 2. Lifesaving irrigation if available	1. Hoeingand weeding 2. Lifesaving irrigation on criticalstages	-do-
		Cowpea	1. Weedfree 2. Lifesaving irrigation if available	1. Hoeingand weeding 2Lifesaving irrigation on criticalstages	-do-

		Moong	1. Weedfree 2. Lifesaving irrigation if available	1. Hoeing and weeding 2. Lifesaving irrigation on critical stages	-do-
		Mothbean	1. Weedfree	1. Hoeing and weeding	-do-
	2. Deep dark brown sandy soil (Low rainfall area)	Pearl millet	1. Weedfree 2. Lifesaving irrigation if available 3. Remove alternate row 4. Ridge and furrow making	1. Hoeing and weeding 2. Lifesaving irrigation on critical stages	Seed source 1. NSSC 2. RSSC 3. NSP 4. Water harvesting structure can be constructed under MANREGA
		Clusterbean	1. Weedfree 2. Lifesaving irrigation if available	1. Hoeing and weeding	-do-
		Cowpea	1. Weedfree 2. Lifesaving irrigation if available	1. Hoeing and weeding	-do-
		Moong	1. Weedfree 2. Lifesaving irrigation if available	1. Hoeing and weeding	-do-
		Mothbean	1. Weedfree	1. Hoeing and weeding	-do-
	3. Rainfed Other soils	Pearl millet	1. Weedfree	1. Hoeing and weeding	1. NSSC
		Clusterbean	2. Lifesaving irrigation if available	2. Lifesaving irrigation on critical stages	2. RSSC
		Cowpea	3. Remove alternate row		3. NSP
		Moong			4. Water harvesting structure can be constructed
		Mothbean			

Condition		Suggested Contingency measures			
Midseason drought (Long dry spell)	Major farming situation	Crop /cropping system	Crop management	Soil nutrient and moisture conservation measures	Remarks on implementation
At reproductive stage	1. Deep yellowish brown sandy soil (high rainfall area)	Pearl millet	1. Lifesaving irrigation if available		Seed source 1. NSSC 2. RSSC 3. NSP 4. Water harvesting structure can be constructed under MANREGA
		Clusterbean	1. Lifesaving irrigation if available		-do-

		Cowpea	Lifesaving irrigation if available		-do-
		Moong	Lifesaving irrigation if available		-do-
		Mothbean	Lifesaving irrigation if available		-do-
	2. Deep dark brown sandy soil (Low rainfall area)	Pearlmillet	1. Lifesaving irrigation if available		Seed source 1. NSSC 2. RSSC 3. NSP 4. Water harvesting structure can be constructed under MANREGA
		Clusterbean	1. Lifesaving irrigation if available		-do-
		Cowpea	Lifesaving irrigation if available		-do-
		Moong	Lifesaving irrigation if available		-do-
		Mothbean	Lifesaving irrigation if available		-do-
	3. Rainfed Other soils	Pearlmillet	1. Lifesaving irrigation if available		Seed source 1. NSSC 2. RSSC 3. NSP 4. Water harvesting structure can be constructed under MANREGA
		Clusterbean			
		Cowpea			
		Moong			
		Mothbean			

Contingency measures- End of the season

Condition	Suggested Contingency measures				
Terminal drought	Major farming situation	Crop /cropping system	Crop management	Rabi crop planning	Remarks on implementation
Terminal drought	1. Deep yellowish brown sandy soil (high rainfall area)	Pearlmillet	Harvesting	Conserve soil moisture, Reduce the plant population	Seed source 1. NSSC 2. RSSC 3. NSP 4. Water harvesting structure can be constructed under MANREGA
		Clusterbean	Harvesting	Conserve soil moisture, Reduce the plant population	-do-

		Cowpea	Harvesting	Conservesoil moisture,Reduce theplantpopulation	-do-
		Moong	Harvesting	Conserve soil moisture,Reduce theplantpopulation	-do-
		Mothbean	Harvesting	Conservesoil moisture,Reduce theplantpopulation	-do-
	2. Deep dark brown sandysoil (Low rainfall area)	Pearlmillet	Harvesting	Conserve soil moisture,Reducetheplant population	Seedsource 1.NSSC 2. RSSC 3. NSP 4. Waterharvesting structure can be constructed under MANREGA
		Clusterbean	Harvesting	Conservesoil moisture	-do-
		Cowpea	Harvesting	Conservesoil moisture	-do-
		Moong	Harvesting	Conservesoil moisture	-do-
		Mothbean	Harvesting	Conservesoil moisture	-do-
	3. Rainfed other soils	Pearlmillet	Harvesting	Conservesoil moisture	Seedsource 1.NSSC 2. RSSC 3. NSP 4. Waterharvesting structure can be constructed under MANREGA 5.
		Clusterbean	-do-	-do-	-do-
		Cowpea	-do-	-do-	-do-
		Moong	-do-	-do-	-do-
		Mothbean	-do-	-do-	-do-

Irrigated situation: N.A

Resource management technologies

- Desilting of community pond for increasing the water storage capacity and for providing supplemental irrigation during kharif and rabi seasons
- Renovation of check dams to enhance water storage capacity for providing supplemental irrigation during kharif and rabi
- Desilting of drainage channel to enhance water availability for providing supplemental irrigation to kharif and rabi crops
- Farm ponds for lifesaving irrigation to high value rabi crops
- Recharge structures with silt trap for tube wells to harvest water for sustainable crop intensification
- Micro irrigation system in wheat and vegetables for enhancing water use efficiency and crop productivity
- Broad bed furrow system in soybean for enhancing water use efficiency and crop productivity
- Furrow irrigated raised bed for enhancing water use efficiency and productivity in wheat
- Land levelling in wheat for improving yield and resources utilization

- Conservation furrow system in mustard for enhancing water use efficiency and crop productivity
- Continuous contour trenching and bunding in bajra and soybean to overcome water stress during dry spells and to improve crop productivity
- Application of tank silt for increasing the moisture holding capacity and fertility of the soil
- Application of gypsum to enhance the productivity and oil content of mustard crops
- Green manuring in wheat for enhancing the soil nutrient status and crop productivity
- Compost for improving soil fertility and for increasing crop yields
- Roof water harvesting in tanks for irrigation and drinking

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	JODHPUR
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	292.6	More than 19%	Less than 237.006
June	38.3		
July	106.4		
August	91.9		
September	56		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	218912	Gross irrigated area:	407280
Net Rainfed area	607585	Gross rainfed area	649863

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	-	-
Wells	217885	402922
Tanks	-	-
Other sources	1027	4358

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	0	0	
2	Jowar	31978	5	31973
3	Maize	2	2	0
4	Bajra	274317	22004	252313
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	-		
2	Groundnut	47975	47891	84
3	Sesamum	19443	221	19222
4	Soyabean	-		
5	Sunflower	-		
6	Castor	10501		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	45490	45402	88
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	-		
2	Tobacco	-		
3	Guar seed	38645		2875
4	Other Fodder crops	14386	11511	2875

Crop Plan- Beginning of the season

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delay by 4 weeks (1 st week of August)	Low rain fall, Sand Dunes with undulating inter-dunal spaces/ Deep sandy plain/ Coarse to fine textured hard pan soils (Rainfed)	Pearl millet	No change Use extra early hybrids viz. HHB 67, ICMH 356 GHB 358	- Reduce <u>25% acreage</u> Sowing at 60 cm & use press wheel - Mix cropping with moth & guar	- Use certified seed from NSC, RSSC, SAU - Provide subsidy by Ag. Dept. under RKVY for press wheel device
		Sesame	No change Use RT 127 & RT 346	-	
		Mothbean	No change Use RMO 40, RMO 257	- Seed priming with 0.05% thiourea - Increase seed rate of by 10-15%	
		Greengram	moth and guar	- Seed priming with 0.05% thiourea - Increase seed rate of by 10-15%	
		Cluster bean	No change Use RGC 936, RGC 1003 & RGM 112	- Seed priming with 0.05% thiourea - Increase seed rate of by 10-15%	

Contingency measures- Mid season

Condition			Suggested Contingency measures		
Mid season drought (long dry spell, consecutive)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation

2 weeks rainless (>2.5 mm) period) At vegetative stage	Low rain fall, Sand Dunes with undulating inter-dunal spaces/ Deep sandy plain/ Coarse to fine textured hard pan soils (Rainfed)	Pearl millet	Remove 25% within row Timely weed control by wheel hand hoe	Dust and vegetative mulch • Delay top dressing urea • Provide life saving irrigation if available. • Spray of thiourea at 500 ppm	Water harvesting structures be constructed with larger catchment area under MGNREGA, NHM, RKVY, NFSM, ISOPOM etc Provide subsidy for thiourea
		Sesame	Timely weed control	• Spray of Urea (2%), Provide life saving irrigation. • Weeding, using dust & vegetative mulch	
		Mothbean	Timely weed control by hoe	• Spray of thiourea at 500 ppm at vegetative. • Weeding, using dust & vegetative mulch	
		Greengram	Timely weed control by hoe	• Spray of thiourea at 500 ppm at vegetative • Weeding, using dust & vegetative mulch	
		Cluster bean	Timely weed control by hoe	• Spray of thiourea at 500 ppm at vegetative • Weeding, using dust & vegetative mulch	
Reproductive phase	Low rain fall, Sand Dunes with undulating inter-dunal spaces/ Deep sandy plain/ Coarse to fine textured hard pan soils (Rainfed)	Pearl millet	Timely weed control by hoe Spray of thiourea at 500 ppm Provide life saving irrigation		
		Sesame	Timely weed control by hoe	Spray of urea (2%), Provide life saving irrigation	
		Moth	Timely weed control by hoe	Spray of thiourea at 500 ppm at reproductive stage. Life saving irrigation	
		Mothbean	Timely weed control by hoe	Spray of thiourea at 500	

				ppm at reproductive stage. Life saving irrigation	
		Greengram	Timely weed control by hoe	Spray of thiourea at 500 ppm at reproductive stage. Life saving irrigation	

Contingency measures- End of the season

Condition			Suggested Contingency measures		
Terminal drought	Major Farming situation	Normal Crop/cropping system	Crop management	Rabi Crop planning measures	Remarks on Implementation
(Early withdrawal of monsoon)	Low rain fall, Sand Dunes with undulating inter-dunal spaces/ Deep sandy plain/ Coarse to fine textured hard pan soils (Rainfed)	Pearl millet	Life saving irrigation if feasible If damage will be severe, harvest for fodder	Sowing of Barley using poor quality water in Luni basin	Link watersheds, NREGS for water harvesting technology
		Sesame	Life saving irrigation if feasible If damage will be severe, harvest for fodder	-	
		Moth	-do-	-	
		Moong	-do-	-	
		Cluster bean	-do-	-	

Irrigated situation

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed release of water in canals due to low rainfall	Not applicable				

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures ⁱ	Remarks on Implementation
Limited release of water in canals due to low rainfall	Not applicable				

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non release of water in canals under delayed onset of monsoon in catchment	Not applicable				

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	Not applicable				

Condition			Suggested Contingency measures		
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Insufficient groundwater recharge due to low rainfall	Irrigated conditions	Groundnut	Reduce area under Groundnut Cotton castor,	Use low water requiring cultivars Use sprinkler or drip irrigation system,	- Use certified seed of from NSC, RSSC, SAU - Provide subsidy for MIS
		castor	Castor	-do-	
		cotton	cotton	-do-	
		chilli	Chilli/Taramira	-do-	
		Wheat	Sowing of early maturing and drought tolerant varieties of	-do-	
		Mustard	Sowing of early maturing and drought tolerant varieties of Mustard (Bio 902),	-do-	
		Cumin	Cumin RZ 209 or Taramira (RTM 314) with limited irrigation can be grown if conserved moisture is available because of late season rain fall	-do-	
		Isabgol	Isabgol (RI 1)	-do-	

Resource management technologies

- Construction of community pond/tanka for recharge of ground water and life saving irrigation
 - for *Kharif* crop and for animal drinking during hot summer.
- Construction of farm ponds to provide supplemental irrigation to cluster bean, green gram
 - and wheat crops.
- Recharging of open/tube wells with silt trap injection well to increase irrigated area and lifesaving
 - irrigation to *Rabi* crops.
- Land levelling in wheat crop, deep summer ploughing, poly mulching in vegetable crops to
 - facilitate *in-situ* water harvesting for better germination of *Kharif* and *Rabi* crops.
- Drip irrigation with harvested water for efficient use to pomegranate and vegetable crops
 - (brinjal & cauliflower) and Sprinkler irrigation of recharged bore well water to mustard and onion crops.
- Roof water harvesting tanks for the year round safe water availability to animals and household activities.
- Soil test based nutrient application by using soil health cards for major crops like Bajra, Soybean etc.
- Agrisilviculture system with Budded khejri and alley cropping of green gram.
- Application of tank silt in sandy soil fields for improving water holding capacity of the soils.
- Resilient intercropping system of green gram + pearl millet (4:1) to minimize the risk with assured income.
- Crop diversification to fennel-RF-205, 101, 145 & 125 under limited irrigation conditions for higher returns.
- Construction of portable pakka housing for goat and buffalo for reduction of heat stress in summer and cold wave in winter.

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	KARAULI
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	595.8	More than 19%	Less than 482.598
June	66.6		
July	208.7		
August	219.1		
September	101.4		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	110358	Gross irrigated area:	110873
Net Rainfed area	8726	Gross rainfed area	103268

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	606	606
Wells	107385	107900
Tanks	1894	1894
Other sources	473	473

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	728	22	706
2	Jowar	144	-	
3	Maize	1		1
4	Bajra	89947	24	89923
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	1		1
2	Groundnut	77	2	75
3	Sesamum	10397		10397
4	Soyabean	18		18
5	Sunflower	-		
6	Castor	-		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	5	5	0
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	4	4	0
2	Tobacco	-		
3	Guar seed	129		239
4	Other Fodder crops	297	58	239

Crop Plan- Beginning of the season

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation ^a	Normal Crop/cropping system ^b	Change in crop/cropping system ^c (short duration)	Agronomic measures ^d	Remarks on Implementation ^e
Delay by 4 weeks (Specify month) July III week	1.Rainfed Deep brown loamy soil (high rain)	Bajra, Guar, Til -mustard, wheat, barley, gram, Bajra-HHB-67, HHB-94, ICMH-356, MH-169. Guar-RGC—486, 1003, 1017, 1002, 1091, 936. Til- RT-46, RT-125, RT-127.	Guar-RGC-936, 1003, 1002, 1017, RGM 112. Bajra-HHB-67, ICTP-8203, HHB 60, RHB 30 356.	Prepare seed nursery of bajra & transplant in July end. Inter cropping in Bajra. Paired 2 rows of Bajra at 30 cm & one row of moong / guar.	Seed drill under RKVY, supply of seed through RSSC, NSC, Bio-fertilizers, plain water harvesting structures, for regular fodder supply planting of Ardu, subabul, etc. at farmer & village level. Desilting of ponds to increase their capacity.
	2. Rainfed Deep brown clayey soil (medium rain)				
	3. Rainfed Medium brown loamy soil (high rain)				

Contingency measures- Mid season

Condition			Suggested Contingency measures		
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
At vegetative stage	1.Rainfed Deep brown loamy soil (high rain)	As above	Life saving irrigation, thinning, weeding. Spraying of 1% thiourea in bajra, guar, etc.	Mulching	Supply of interculture implements through RKVY.
	2. Rainfed Deep brown clayey soil (medium rain)				
	3. Rainfed Medium brown loamy soil (high rain)				

Contingency measures- End of the season

Irrigated Situated: NA

Resource management technologies

- Construction of community pond/tanka for recharge of ground water and life saving irrigation
 - for *Kharif* crop and for animal drinking during hot summer.
- Construction of farm ponds to provide supplemental irrigation to cluster bean, green gram
 - and wheat crops.
- Recharging of open/tube wells with silt trap injection well to increase irrigated area and lifesaving
 - irrigation to *Rabi* crops.
- Land levelling in wheat crop, deep summer ploughing, poly mulching in vegetable crops to
 - facilitate *in-situ* water harvesting for better germination of *Kharif* and *Rabi* crops.
- Drip irrigation with harvested water for efficient use to pomegranate and vegetable crops
 - (brinjal & cauliflower) and Sprinkler irrigation of recharged bore well water to mustard and
 - onion crops.
- Roof water harvesting tanks for the year round safe water availability to animals and household activities.
- Soil test based nutrient application by using soil health cards for major crops like Bajra, Soybean etc.
- Agrisilviculture system with Budded khejri and alley cropping of green gram.
- Application of tank silt in sandy soil fields for improving water holding capacity of the soils.
- Resilient intercropping system of green gram + pearl millet (4:1) to minimize the risk with assured income.
- Crop diversification to fennel-RF-205, 101, 145 & 125 under limited irrigation conditions for higher returns.
- Construction of portable pakka housing for goat and buffalo for reduction of heat stress in summer and cold wave in winter.

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	NAGAU
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	369.5	More than 19%	Less than 299.295
June	55.3		
July	142.9		
August	116.3		
September	55		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	275232	Gross irrigated area:	368949
Net Rainfed area	571950	Gross rainfed area	778995

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	-	-
Wells	274723	368301
Tanks	-	-
Other sources	509	648

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	3	0	
2	Jowar	18397	116	18281
3	Maize	12	3	9
4	Bajra	129177	6616	122561
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	-		
2	Groundnut	17056	7632	9424
3	Sesamum	2947	14	2933
4	Soyabean	-		
5	Sunflower	-		
6	Castor	57		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	85260	83856	1404
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	-		
2	Tobacco	-		
3	Guar seed	84141		0
4	Other Fodder crops	516	516	0

Crop Plan- Beginning of the season

Condition	Suggested Contingency measures				
Early season drought delayed onset	Major farming situation	Crop /cropping system	Change in crop/cropping system	Agronomic measures	Remarks on implementation
Delayed by 4 week (4 th wk July)	Rainfed Deep pale brown sandy soil (high rain fall area) (27.82%)	Pearl millet	Varieties-HHB-67,HHB-60 or Replace with clusterbean variety RGC-936 or Cowpea variety RC-101 or Mothbean Variety RMO-40,RMo-435	1.Seed treatment with thiourea @1000ppm in pearl millet and @ 500ppm in moth and clusterbean 2.Basal dose of RDF including FYM 3.Soil/Straw mulch after 15 -20 DAS 4.Weed free field.	Seed source 1.NSSC 2.RSSC 3.NSP
		Clusterbean	Prefer Varieties-RGC-936,	1.Seed treatment with thiourea @500ppm 2.Basal dose of RDF 3. Weed free field.	-do-
		Cowpea	Prefer Varieties-RC-101	1.Basal dose of RDF 2. Weed free field and dust mulching.	-do-
		Greengram	Prefer Varieties-RMG-62, RMG-268	-do-	-do-
		Mothbean	Prefer Varieties-RMO-40, RMO-435	1.Seed treatment with thiourea @500ppm 2.Basal dose of RDF 3. Weed free field and dust mulching.	-do-

Rainfed Deep yellowish brown sandy soil (medium rain fall area) (25.20 %)	Pearl millet	Varieties-HHB-67,HHB-60 or Replace with clusterbean variety RGC-936 or Cowpea variety RC-101 or Mothbean Variety RMO-40,RMO-435	1.Seed treatment with thiourea @1000ppm in pearl millet and @ 500ppm in moth and clusterbean 2.Basal dose of RDF including FYM 3.Soil/Straw mulch after 15 -20 DAS 4. Weed free field.	Seed source 1.NSSC 2.RSSC 3.NSP
	Clusterbean	Prefer varieties RGC-936,	1.Seed treatment with thiourea @500ppm 2.Basal dose of RDF 3.Weed free field.	-do-
	Cowpea	Prefer varieties RC-101	1.Basal dose of RDF 2.Weed free field and dust mulching.	-do-
	Greengram	Prefer varieties RMG-62, RMG-268	-do-	-do-
	Mothbean	Prefer varieties RMO-40, RMO-435,	1.Seed treatment with thiourea @500ppm 2.Basal dose of RDF 3.Weed free field and dust mulching.	-do-
Rainfed Deep pale brown sandy soil (high rain fall area) (22.14 %)	Pearl millet	Varieties-HHB-67,HHB-60 or Replace with clusterbean variety RGC-936 or Cowpea variety RC-101 or Mothbean Variety RMO-40,RMO-435	1.Seed treatment with thiourea @1000ppm in pearl millet and @ 500ppm in moth and clusterbean 2.Basal dose of RDF including FYM 3.Soil/Straw mulch after 15 -20 DAS 4.Weed free field.	Seed source 1.NSSC 2.RSSC 3.NSP
	Clusterbean	Prefer varieties RGC-936,	1.Seed treatment with thiourea @500ppm 2.Basal dose of RDF 3.Weed free field.	-do-
	Cowpea	Prefer varieties RC-101	1.Basal dose of RDF 2.Weed free field and dust mulching.	-do-
	Greengram	Prefer varieties RMG-62, RMG-268	-do-	-do-
	Mothbean	Prefer varieties RMO-40, RMO-435,	1.Seed treatment with thiourea @500ppm 2.Basal dose of RDF 3.Weed free field and dust mulching.	-do-
Rainfed Others soil (24.84 %)	Pearl millet	Varieties-HHB-67,HHB-60 or Replace with clusterbean variety RGC-936 or Cowpea variety RC-101 or Mothbean Variety RMO-40,RMO-435	1.Seed treatment with thiourea @1000ppm in pearl millet and @ 500ppm in moth and clusterbean 2.Basal dose of RDF including FYM 3.Soil/Straw mulch after 15 -20 DAS	Seed source 1.NSSC 2.RSSC 3.NSP

				4. Weed free field.	
		Clusterbean	Prefer varieties RGC-936,	1. Seed treatment with thiourea @500ppm 2. Basal dose of RDF 3. Weed free field.	-do-
		Cowpea	Prefer varieties RC-101	1. Basal dose of RDF 2. Weed free field and dust mulching.	-do-
		Moong	Prefer varieties RMG-62, RMG-268	-do-	-do-
		Mothbean	Prefer varieties RMO-40, RMO-435,	1. Seed treatment with thiourea @500ppm 2. Basal dose of RDF 3. Weed free field and dust mulching.	-do-

Contingency measures- Mid season

Condition	Suggested Contingency measures				
Mid season drought (Long dry spell, Consecutive two weeks rainless(>2.5mm period))	Major farming situation	Crop /cropping system	Crop management	Soil nutrient and moisture conservation measures	Remarks on implementation
At vegetative stage	Rainfed Deep pale brown sandy soil (high rain fall area) (27.82%)	Pearl millet	1. Weed free 2. Life saving irrigation if available 3. Remove alternate row 4. Ridge and furrow making 5. Spray of thiourea @ 0.1%	1. Hoeing and weeding	Seed source 1. NSSC 2. RSSC 3. NSP 4. Water harvesting structure can be constructed under MANREGA
		Clusterbean	1. Weed free 2. Life saving irrigation if available 3. Spray of thiourea @ 0.05%	-do-	-do-
		Cowpea	-do-	-do-	-do-
		Greengram	-do-	Hoeing and weeding	-do-
		Mothbean	Weed free	-do-	-do-
	Rainfed Deep yellowish brown sandy soil (medium rain fall area) (25.20 %)	Pearl millet	1. Weed free 2. Life saving irrigation if available 3. Remove alternate row 4. Ridge and furrow making 5. Spray of thiourea @ 0.1%	-do-	Seed source 1. NSSC 2. RSSC 3. NSP 4. Water harvesting structure can be constructed under MANREGA
		Clusterbean	1. Weed free 2. Life saving irrigation if available 3. Spray of thiourea @ 0.05%	-do-	-do-
		Cowpea	1. Weed free	-do-	-do-

			2. Life saving irrigation if available		
		Greengram	-do-	-do-	-do-
		Mothbean	Weed free	-do-	-do-
	Rainfed Deep pale brown sandy soil (high rain fall area) (22.14 %)	Pearl millet	1.Weed free 2. Life saving irrigation if available 3.Remove alternate row 4.Ridge and furrow making 5.Spray of thiourea @ 0.1%	-do-	Seed source 1.NSSC 2.RSSC 3.NSP 4.Water harvesting structure can be constructed under MANREGA
		Clusterbean	1.Weed free 2. Life saving irrigation if available 3.Spray of thiourea @ 0.05%	-do-	-do-
		Cowpea	1.Weed free 2. Life saving irrigation if available	-do-	-do-
		Greengram	-do-	-do-	-do-
		Mothbean	Weed free	-do-	-do-
	Rainfed Others soil (24.84 %)	Pearl millet	1. Weed free 2. Life saving irrigation if available 3.Remove alternate row 4.Ridge and furrow making 5.Spray of thiourea @ 0.1%	-do-	Seed source 1.NSSC 2.RSSC 3.NSP 4.Water harvesting structure can be constructed under MANREGA
		Clusterbean	1.Weed free 2. Life saving irrigation if available 3.Spray of thiourea @ 0.05%	-do-	-do-
		Cowpea	1.Weed free 2. Life saving irrigation if available	-do-	-do-
		Greengram	-do-	-do-	-do-
		Mothbean	Weed free	-do-	-do-

Contingency measures- End of the season

Condition	Suggested Contingency measures				
Terminal drought	Major farming situation	Crop /cropping system	Crop management	Rabi crop planning	Remarks on implementation
	Rainfed Deep pale brown sandy soil (high rain fall area)	Pearl millet	Harvesting	Conserve soil moisture	Seed source 1.NSSC 2.RSSC

	(27.82%)				3.NSP 4.Water harvesting structure can be constructed under MANREGA
		Clusterbean	-do-	-do-	-do-
		Cowpea	-do-	-do-	-do-
		Greengram	-do-	-do-	-do-
		Mothbean	-do-	-do-	-do-
	Rainfed Deep yellowish brown sandy soil (medium rain fall area) (25.20 %)	Pearl millet	-do-	-do-	Seed source 1.NSSC 2.RSSC 3.NSP 4.Water harvesting structure can be constructed under MANREGA
		Clusterbean	Harvesting	Conserve soil moisture	-do-
		Cowpea	-do-	-do-	-do-
		Greengram	-do-	-do-	-do-
		Mothbean	-do-	-do-	-do-
	Rainfed Deep pale brown sandy soil (high rain fall area) (22.14 %)	Pearl millet	-do-	-do-	Seed source 1.NSSC 2.RSSC 3.NSP 4.Water harvesting structure can be constructed under MANREGA
		Clusterbean	-do-	-do-	-do-
		Cowpea	-do-	-do-	-do-
		Greengram	-do-	-do-	-do-
		Mothbean	-do-	-do-	-do-
	Rainfed Others soil (24.84 %)	Pearl millet	-do-	-do-	Seed source 1.NSSC 2.RSSC 3.NSP 4.Water harvesting structure can be constructed under MANREGA
		Clusterbean	-do-	-do-	-do-
		Cowpea	-do-	-do-	-do-
		Greengram	-do-	-do-	-do-
		Mothbean	-do-	-do-	-do-

Irrigated Situation: NA

Resource management technologies

- Construction of community pond/tanka for recharge of ground water and life saving irrigation
 - for *Kharif* crop and for animal drinking during hot summer.
- Construction of farm ponds to provide supplemental irrigation to cluster bean, green gram
 - and wheat crops.
- Recharging of open/tube wells with silt trap injection well to increase irrigated area and lifesaving
 - irrigation to *Rabi* crops.
- Land levelling in wheat crop, deep summer ploughing, poly mulching in vegetable crops to
 - facilitate *in-situ* water harvesting for better germination of *Kharif* and *Rabi* crops.
- Drip irrigation with harvested water for efficient use to pomegranate and vegetable crops

- (brinjal & cauliflower) and Sprinkler irrigation of recharged bore well water to mustard and
 - onion crops.
- Roof water harvesting tanks for the year round safe water availability to animals and household
- activities.
- Soil test based nutrient application by using soil health cards for major crops like Bajra, Soybean etc.
- Agrisilviculture system with Budded khejri and alley cropping of green gram.
- Application of tank silt in sandy soil fields for improving water holding capacity of the soils.
- Resilient intercropping system of green gram + pearl millet (4:1) to minimize the risk with assured income.
- Crop diversification to fennel-RF-205, 101, 145 & 125 under limited irrigation conditions for higher returns.
- Construction of portable pakka housing for goat and buffalo for reduction of heat stress in summer and cold wave in winter.

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	PALI
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	491.6	More than 19%	Less than 398.196
June	51.9		
July	184.2		
August	169.1		
September	86.4		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	169694	Gross irrigated area:	180443
Net Rainfed area	325396	Gross rainfed area	505152

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	22674	22674
Wells	133081	143825
Tanks	13523	13528
Other sources	416	416

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	0	0	
2	Jowar	47107	179	46928
3	Maize	8685	401	8284
4	Bajra	13127	6	13121
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	2		2
2	Groundnut	335	42	293
3	Sesamum	54642	81	54561
4	Soyabean	13	2	11
5	Sunflower	-		
6	Castor	15229		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	12154	10962	1192
2	Jute	-		

3	Mesta	-		
4	Sunhemp	2		2

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	-		
2	Tobacco	-		
3	Guar seed	14989		1759
4	Other Fodder crops	5116	3357	1759

Crop Plan- Beginning of the season

Condition					
Early season drought (delayed onset)	Major Farming situation ^a	Normal Crop/cropping system ^b	Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Delay by 4 weeks (4 th week of July)	Rainfed deep yellow brown sandy soil	Pearl millet: MH 169, ICMH 356, RHB 121, & Raj 171	Pearl millet: HHB 67, HHB 68 & RHB 121	Early maturing varieties should be sown. Use press wheel behind tine to secure good germination. Transplanting of pearl millet seedling. Grow Pulse, Sesame, Guar and Sorghum fodder crops. Adopt wider row spacing with low plant population. Timely removal of weeds, clean cultivation & adoption of dust/ vegetative mulching	Use of NSC, RSSC, SAUniversity& other agencies certified seed.
		Sesame: RT 127, RT 46 & RT 346	Sesame: RT 127, RT 46 & RT 346		
		Mothbean: RMO 40, RMO 225, RMO 257 & RMO 435	Moth bean: RMO 40, RMO 225, CAZRI moth 2 & 3		
		Green gram: SML 668, RMG 62 & RMG 268	Green gram: SML 668		
		Cluster bean	Cluster bean: RGC 936, RGC 1003 & RGM 112		
	Rainfed medium light brown loamy soil	Cow pea: RC 19, RC 101 & MF 68	RC 19, RC 101	Summer ploughing for conserving moisture in the soil. Compartmental bunding of field. Ridge and furrow (45 or 60 cm) system Use of FYM in every third year Inter cropping or mix cropping with pulses and sesame. Water harvesting tank for terminal drought life saving irrigation.	Use of NSC, RSSC, SAUniversity& other agencies certified seed.
		Mahandi (Henna)	Mahandi (Henna)		
		Sorghum for seed	Sorghum fodder		
		Sorghum fodder: RSG 59-3, MP Chari, Rajasthan Chari	Sorghum fodder: RSG 59-3, MP Chari, Rajasthan Chari		
		Pearl millet fodder: Raj Chari, Raj 171 & PusaJaint	Pearl millet fodder: Raj Chari, Raj 171 & bajara own seed for fodder.		
	Rainfed Other soils (medium rain)	Cow pea: RC 19, RC 101 & MF 68		Summer ploughing for conserving moisture in the soil.	Use of NSC, RSSC, SAUniversity& other agencies certified seed.

				Compartmental bunding of field. Ridge and furrow (45 or 60 cm) system Use of FYM in every third year Inter cropping or mix cropping with pulses and sesame. Water harvesting tank for terminal drought life saving irrigation.	
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Contingency measures- Mid season

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Rainfed deep yellow brown sandy soil	Pearl millet: MH 169, ICMH 356, RHB 121, & Raj 171	Removing alternate plant or row. Harvesting for fodder purpose	Timely removal of weeds, clean cultivation in between intra row spacing & adoption of dust/ vegetative mulching.	This stage is very critical & all Agronomical operation should perform in time according to need.
		Sesame: RT 127, RT 46 & RT 346	Fodder mulching and spray of Urea (0.2%), Provide life saving protective irrigation.	Use of FYM in every third year.	
		Moth bean: RMG 40, RMG 225, RMG 257 & RMO 435	Spray of anti transparent. Or thiourea @ 500ppm Removing of weeds at 35 DAS & 40 DAS.	Water harvesting tank for protective life saving irrigation at vegetative stage & application of irrigation to prevent terminal drought.	
		Green gram: SML 668, RMG 62 & RMG 268	Spray of anti transparent. Or thiourea @ 500ppm		
		Cluster bean: RGC 936, RGC 1003, RGC 1002 & RGM 112	Spray of anti transparent. Or thiourea @ 500ppm Adoption of proper and timely plant protection measures.		
	Rainfed medium light brown loamy soil	Cowpea: RC 19, RC 101 & MF 68	Roughing & removing phyllodyinfested plants.		This stage is very critical & all Agronomical operation should perform in time according to need.
		Mahandi (Henna)	In case of total failure re-sowing of Pulses, Guar, sesame and Sorghum fodder crops.		
		Sorghum for seed			

		Sorghum fodder: RSG 59-3, MP Chari, Rajasthan Chari	Spray of thiourea at 500 – 1000 ppm at vegetative and reproductive stage.		
		Bajrafodder: Raj Chari, Raj 171 & Pusa Jaint			
	Rainfed Other soils (medium rain)	Cowpea: RC 19, RC 101 & MF 68	Roughing & removing phyllody infested plants.		This stage is very critical & all Agronomical operation should perform in time according to need.
		Mahandi (Henna)	In case of total failure re-sowing of Pulses, Guar, sesame and Sorghum fodder crops.		
		Sorghum for seed			
		Sorghum fodder: RSG 59-3, MP Chari, Rajasthan Chari	Spray of thiourea at 500 – 1000 ppm at vegetative and reproductive stage.		
		Bajrafodder: Raj Chari, Raj 171 & Pusa Jaint			

Contingency measures- End of the season

Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Rabi Crop planning ^d measures ^d	Remarks on Implementation ^e
	Rainfed deep yellow brown sandy soil	Pearl millet: MH 169, ICMH 356, RHB 121, & Raj 171	Provide life saving protective irrigation. Water harvesting tank for protective life saving irrigation to prevent terminal drought.	If heavy rain (> 50 mm) soil moisture is more than 150mm after harvest of kharif crop sowing of rabi crop (mustard, cumin, taramira, barley, gram & wheat) sowing from 15 Sept. onwards should be started.	At this stage decide proper harvesting time & store fodder and grain after complete drying.
		Sesame: RT 127, RT 46 & RT 346	Roughing & removing phyllody infested plants.		Planning for sowing rabi crops.
		Mothbean: RMG 40, RMG 225, RMG 257 & RMO 435			-do-
		Green gram: SML 668, RMG 62 & NMG 268	Adoption of Post harvest technology.		-do-
	Rainfed medium light brown loamy soil	Cluster bean: RGC 936, RGC 1003, RGC 1002 & RGM 112		If heavy rain (> 50 mm) soil moisture is more than 150mm after harvest of kharif crop sowing of rabi crop (mustard, cumin, taramira, barley, gram & wheat) sowing from 15 Sept. onwards should be started.	This stage is also very critical & all Agronomical operation should perform in time according to need.
		Cowpea: RC 19, RC 101 & MF 68			

		Mahandi (Henna)			
		Sorghum for seed			
		Sorghum fodder: RSG 59-3, MP Chari, Rajasthan Chari			
	Rainfed Other soils (medium rain)	Cluster bean: RGC 936, RGC 1003, RGC 1002 & RGM 112		If heavy rain (> 50 mm) soil moisture is more than 150mm after harvest of kharif crop sowing of rabi crop (mustard, cumin, taramira, barley, gram & wheat) sowing from 15 Sept. onwards should be started.	This stage is also very critical & all Agronomical operation should perform in time according to need.
		Cowpea: RC 19, RC 101 & MF 68			
		Mahandi (Henna)			
		Sorghum for seed			
		Sorghum fodder: RSG 59-3, MP Chari, Rajasthan Chari			

Irrigated Situation: NA

Resource management technologies

- Construction of community pond/tanka for recharge of ground water and life saving irrigation
 - for *Kharif* crop and for animal drinking during hot summer.
- Construction of farm ponds to provide supplemental irrigation to cluster bean, green gram
 - and wheat crops.
- Recharging of open/tube wells with silt trap injection well to increase irrigated area and lifesaving
 - irrigation to *Rabi* crops.
- Land levelling in wheat crop, deep summer ploughing, poly mulching in vegetable crops to
 - facilitate *in-situ* water harvesting for better germination of *Kharif* and *Rabi* crops.
- Drip irrigation with harvested water for efficient use to pomegranate and vegetable crops
 - (brinjal & cauliflower) and Sprinkler irrigation of recharged bore well water to mustard and onion crops.
- Roof water harvesting tanks for the year round safe water availability to animals and household activities.
- Soil test based nutrient application by using soil health cards for major crops like Bajra, Soybean etc.
- Agrisilviculture system with Budded khejri and alley cropping of green gram.
- Application of tank silt in sandy soil fields for improving water holding capacity of the soils.
- Resilient intercropping system of green gram + pearl millet (4:1) to minimize the risk with assured income.
- Crop diversification to fennel-RF-205, 101, 145 & 125 under limited irrigation conditions for higher returns.
- Construction of portable pakka housing for goat and buffalo for reduction of heat stress in summer and cold wave in winter.

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	PRATAPGARH
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	914.2	More than 19%	Less than 740.502
June	105.8		
July	299.1		
August	328.9		
September	180.4		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	173691	Gross irrigated area:	175349
Net Rainfed area	15029	Gross rainfed area	180318

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	10420	10420
Wells	154903	156305
Tanks	59	59
Other sources	8309	8565

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	147	0	
2	Jowar	19	-	
3	Maize	46202	488	45714
4	Bajra	11		11
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	69		69
2	Groundnut	3953	6	3947
3	Sesamum	261	164	97
4	Soyabean	126753	74	126679
5	Sunflower	-		
6	Castor	1		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	1383		1383
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	-		
2	Tobacco	-		
3	Guar seed	1		165
4	Other Fodder crops	895	730	165

Crop Plan- Beginning of the season

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation ^a	Crop/cropping system ^b	Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation
Delay by 4 weeks 3 rd week of July	Red soils/ Black clay loam soils	Maize	Maize var. Pratap hybrid Makka-1, Pratap Makka-3, 5, PEHM 2, Mahi Kanchan	Timely sowing, Seed treatment with fungicides & culture , Increase seed rate, Dry Sowing (Use of 10-15% higher seed rate in soybean)	Seed sources – RSSC, NSC, Tilam Sangh etc.
		Soybean	Soybean var JS 95-60, JS-335, RKS-24		
		Blackgram	Greengram		
		Fallow	Azwain		
		Ground nut	Blackgram Blackgram var Pu-31, KU-96-3, T-9		

Contingency measures- Mid season

Condition			Suggested Contingency measures		
Mid season drought (long dry spell,	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Flowering stage	Red soils/ Black clay loam soils	Maize	Maize var. Pratap hybrid Makka-1, Pratap Makka-3, 5, PEHM 2, Mahi Kanchan	Harvest cobs for table purpose (if market is available) and for green fodder, Harvesting of green cobs and go for green fodder, Spray of 0.1% thio urea Lifesaving Irrigation in alternate furrows, Weeding & hoeing, Use of organic material as mulch. Use of anti-transpirants like kaolin, Spray 2% urea,	Availability of interculture implements i.e. wheel hand hoe through RKVY, RSSC,NAREGA
		Soybean	Soybean var JS 95-60, JS-335, RKS-24		
		Blackgram	Greengram		
		Fallow	Azwain		
		Ground nut	Blackgram Blackgram var Pu-31, KU-96-3, T-9		

Condition			Suggested Contingency measures		
Mid season drought (long dry spell,	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
				Life saving Irrigation in alternate furrow system in Maize , Thinning of plants by 30 to 50%	

Contingency measures- End of the season

Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
	Red soils/ Black clay loam soils	Maize	Maize Maize var. Pratap hybrid Makka-1, Pratap Makka-3, 5, PEHM 2, Mahi Kanchan	Harvest cobs for table purpose (if market is available) Spray of 0.1% thio urea, Life saving Irrigation in alternate furrows in soybean,	Availability of interculture implements i.e. wheel hand hoe through RKVY RSSC, NSC
		Soybean	Soybean Soybean var JS 95-60, JS-335, RKS-24		
		Blackgram	Greengram		
		Fallow	Azwain		
		Ground nut	Blackgram Blackgram var Pu-31, KU-96-3, T-9	Weeding & hoeing , Use of organic material as mulch, Use of anti-transpirants like kaolin.	

Irrigated Situation: NA

Resource management technologies

- Construction of community pond/tanka for recharge of ground water and life saving irrigation
 - for *Kharif* crop and for animal drinking during hot summer.
- Construction of farm ponds to provide supplemental irrigation to cluster bean, green gram
 - and wheat crops.
- Recharging of open/tube wells with silt trap injection well to increase irrigated area and lifesaving
 - irrigation to *Rabi* crops.
- Land levelling in wheat crop, deep summer ploughing, poly mulching in vegetable crops to
 - facilitate *in-situ* water harvesting for better germination of *Kharif* and *Rabi* crops.
- Drip irrigation with harvested water for efficient use to pomegranate and vegetable crops
 - (brinjal & cauliflower) and Sprinkler irrigation of recharged bore well water to mustard and
 - onion crops.
- Roof water harvesting tanks for the year round safe water availability to animals and household
- activities.

- Soil test based nutrient application by using soil health cards for major crops like Bajra, Soybean etc.
- Agrisilviculture system with Budded khejri and alley cropping of green gram.
- Application of tank silt in sandy soil fields for improving water holding capacity of the soils.
- Resilient intercropping system of green gram + pearl millet (4:1) to minimize the risk with assured income.
- Crop diversification to fennel-RF-205, 101, 145 & 125 under limited irrigation conditions for higher returns.
- Construction of portable pakka housing for goat and buffalo for reduction of heat stress in summer and cold wave in winter.

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	SAWAI MADHOPUR
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	661.5	More than 19%	Less than 535.815
June	71.5		
July	246.9		
August	238.4		
September	104.7		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	306997	Gross irrigated area:	314431
Net Rainfed area	48051	Gross rainfed area	192928

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	4705	4753
Wells	250656	258042
Tanks	1662	1662
Other sources	49974	49974

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	4951	4950	1
2	Jowar	1545	-	
3	Maize	660		660
4	Bajra	96465	26	96439
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	3		3
2	Groundnut	2894	6	2888
3	Sesamum	28668	7	28661
4	Soyabean	2667	1237	1430
5	Sunflower	-		
6	Castor	1		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	-		
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	2	2	0
2	Tobacco	-		
3	Guar seed	212		2003
4	Other Fodder crops	2308	305	2003

Crop Plan- Beginning of the season

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation ^a	Normal Crop/cropping system ^b	Change in crop/cropping system ^c (short duration)	Agronomic measures ^d	Remarks on Implementation ^e
Delay by 4 weeks (Specify month) July III week	1. Rainfed Deep brown loamy soil (high rain)	As above	Guar-RGC-936, 1003, 1002, 1017, RHB 30, Bajra-HHB-67, ICTP-8203, HHB-60	Prepare seed nursery of bajra & transplant in July end. Inter cropping in Bajra: Paired 2 rows of Bajra at 30 cm & only one row of moong / guar.	Seed drill under RKVY, supply of seed through RSSC, NSC, Bio-fertilizers, plain water harvesting structures, for regular fodder supply planting of Ardu, subabul, etc. at farmer & village level. Desilting of ponds to increase their capacity.
	2. Rainfed Deep brown clayey soil (medium rain)				
	3. Rainfed Red gravelly loam hilly soil (high rain)				

Contingency measures- Mid season

Condition			Suggested Contingency measures		
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
At vegetative stage	1. Rainfed Deep brown loamy soil (high rain)	As above	Life saving irrigation thinning, weeding. Spraying thiourea in bajra, guar, etc.		Supply of interculture implements through RKVY.
	2. Rainfed Deep brown clayey soil (medium rain)				
	3. Rainfed				

	Red gravelly loam hilly soil (high rain)				
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Condition			Suggested Contingency measures		
Mid season drought (long dry spell)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
At flowering/ fruiting stage	1. Rainfed Deep brown loamy soil (high rain)	As above	Life saving irrigation, spray of 0.1% thiourea + 0.2%, FeSO ₄ 0.5%, K ₂ SO ₄ / KCl + 1% urea.	Mulching.	Supply of interculture implements through RKVY.
	2. Rainfed Deep brown clayey soil (medium rain)				
	3. Rainfed Red gravelly loam hilly soil (high rain)				

Contingency measures- End of the season

Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Rabi Crop planning ^d	Remarks on Implementation ^e
	1. Rainfed Deep brown loamy soil (high rain)	As above	Life saving irrigation, harvest the crop for fodder purpose. Weed free field.	Harvested field: prepare the field followed by soil planking to conserve moisture for rabi rainfed crops.	Supply of interculture implements through RKVY.
	2. Rainfed Deep brown clayey soil (medium rain)				
	3. Rainfed Red gravelly loam hilly soil (high rain)				

Irrigated Situation : NA

Resource management technologies

- Tube well recharge technology for increasing the level and quality of ground water and availability of water for irrigation to crops.
- Roof water harvesting tanks for the year round safe water availability to animals and household activities.
- Deep summer ploughing for breaking of subsurface pan and facilitating in-situ water harvesting
 - for better germination of Kharif and Rabi crops.
- Green manuring of dhaincha for increased crop yields of wheat and reduce salinity hazard to crops.
- Application of gypsum to enhance the productivity and oil content of mustard crops.
- Drought tolerant varieties of bajra variety (RHB-173), guar (RGC-HG-2-20) and til (RT-351).
- Short duration guar variety (RGC-HG-2-20) to reduce the damage of long dry spells
- Crop diversification with remunerative crops like fennel by growing improved varieties i.e., RF-205, 101, 145 and 125 for higher profitability.
- Enhanced fodder availability by cultivation of fodder sorghum and berseem to increase milk productivity.

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	SIKAR
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	407.1	More than 19%	Less than 329.751
June	62.6		
July	161.8		
August	123.9		
September	58.8		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	245467	Gross irrigated area:	296226
Net Rainfed area	296501	Gross rainfed area	507616

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	-	-
Wells	245421	296169
Tanks	-	-
Other sources	46	57

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	0	0	
2	Jowar	136	42	94
3	Maize	6		6
4	Bajra	282892	7263	275629
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	-		
2	Groundnut	36440	33720	2720
3	Sesamum	157	3	154
4	Soyabean	-		
5	Sunflower	-		
6	Castor	6		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	127	120	7
2	Jute	-		

3	Mesta	-		
4	Sunhemp	3		3

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	6	5	1
2	Tobacco	9	9	0
3	Guar seed	106706		0
4	Other Fodder crops	10465	10465	0

Crop Plan- Beginning of the season

Condition	Suggested Contingency measures				
Early season drought delayed onset	Major farming situation	Crop /cropping system	Change in crop/cropping system	Agronomic measures	Remarks on implementation
Delayed by 4 week (4 th wk July)	Loamy sand soils	Pearl millet	Varieties-HHB-67,HHB-60 or Replace with clusterbean variety RGC-936 or Cowpea variety RC-101 or Mothbean Variety RMO-40,RMO-435	1.Seed treatment with thiourea @1000ppm in pearl millet and @ 500ppm in moth and clusterbean 2.Basal dose of RDF including FYM 3.Soil/Straw mulch after 15 - 20 DAS 4.Weed free field.	
		Clusterbean	RGC-936,	1.Seed treatment with thiourea @500ppm 2.Basal dose of RDF 3.Weed free field.	
		Cowpea	RC-101	Do-	
		Moong	RMG-62, RMG-268	Do-	
		Mothbean	RMO-40, RMO-435	1.Seed treatment with thiourea @500ppm 2.Basal dose of RDF 3.Weed free field and dust mulching.	

Contingency measures- Mid season

Condition	Suggested Contingency measures				
Mid season drought (Long dry spell, Consecutive two weeks rainless(>2.5mm period))	Major farming situation	Crop /cropping system	Crop management	Soil nutrient and moisture conservation measures	Remarks on implementation
At vegetative stage	Loamy sand	Pearl millet	1.Weed free 2. Life saving irrigation if available 3.Remove alternate row 4.Ridge and furrow making 5.Spray of thiourea @ 0.1%	1.Hoeing and weeding	
		Clusterbean	1.Weed free 2. Life saving irrigation if available 3.Spray of thiourea @ 0.05%	Do-	
		Cowpea	1.Weed free 2. Life saving irrigation if available	Do-	
		Moong	1.Weed free 2. Life saving irrigation if available	Do-	
		Mothbean	1.Weed free	Do-	

Contingency measures- End of the season

Condition	Suggested Contingency measures				
Terminal drought	Major farming situation	Crop /cropping system	Crop management	Rabi crop planning	Remarks on implementation
	Loamy sand	Pearl millet	Harvesting	Conserve soilmoisture	
		Clusterbean	Harvesting	Do-	
		Cowpea	Harvesting	Do-	
		Moong	Harvesting	Do-	
		Mothbean	Harvesting	Do-	

Condition	Suggested Contingency measures				
Terminal drought	Major farming situation	Crop /cropping system	Crop management	Rabi crop planning	Remarks on implementation
	Loamy sand	Pearlmillet	Harvesting	Conserve soil moisture	
		Clusterbean	Harvesting	Do-	
		Cowpea	Harvesting	Do-	
		Moong	Harvesting	Do-	
		Mothbean	Harvesting	Do-	

Irrigated Situation : NA

Resource management technologies

- Construction of community pond/tanka for recharge of ground water and life saving irrigation
 - for *Kharif* crop and for animal drinking during hot summer.
- Construction of farm ponds to provide supplemental irrigation to cluster bean, green gram
 - and wheat crops.
- Recharging of open/tube wells with silt trap injection well to increase irrigated area and lifesaving
 - irrigation to *Rabi* crops.
- Land levelling in wheat crop, deep summer ploughing, poly mulching in vegetable crops to
 - facilitate *in-situ* water harvesting for better germination of *Kharif* and *Rabi* crops.
- Drip irrigation with harvested water for efficient use to pomegranate and vegetable crops
 - (brinjal & cauliflower) and Sprinkler irrigation of recharged bore well water to mustard and
 - onion crops.
- Roof water harvesting tanks for the year round safe water availability to animals and household activities.
- Soil test based nutrient application by using soil health cards for major crops like Bajra, Soybean etc.
- Agrisilviculture system with Budded khejri and alley cropping of green gram.
- Application of tank silt in sandy soil fields for improving water holding capacity of the soils.
- Resilient intercropping system of green gram + pearl millet (4:1) to minimize the risk with assured income.
- Crop diversification to fennel-RF-205, 101, 145 & 125 under limited irrigation conditions for higher returns.
- Construction of portable pakka housing for goat and buffalo for reduction of heat stress in summer and cold wave in winter.

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	SIROHI
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	873	More than 19%	Less than 707.13
June	75.6		
July	344.4		
August	288.2		
September	164.8		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	115700	Gross irrigated area:	169646
Net Rainfed area	43947	Gross rainfed area	67966

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	5335	5383
Wells	109209	163028
Tanks	1156	1235
Other sources	-	-

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	0	0	
2	Jowar	2391	53	2338
3	Maize	13210	136	13074
4	Bajra	10465	5316	5149
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	95		95
2	Groundnut	25435	24779	656
3	Sesamum	9438	82	9356
4	Soyabean	12	4	8
5	Sunflower	-		
6	Castor	47251		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	2672	2517	155
2	Jute	-		

3	Mesta	-		
4	Sunhemp	19	19	0

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	-		
2	Tobacco	-		
3	Guar seed	8997		6256
4	Other Fodder crops	12317	6061	6256

Crop Plan- Beginning of the season

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delay by 4 weeks 1 st week of August	Sandy loam soils	Clusterbean	Clusterbean (RGC-936, RGM-112)		
		Greengram	Greengram(K-851, RMG-62, RMG-268, SML-668)		
		Rizkabajri fodder (Local)	Rizkabajri fodder (Local)		
		Castor	Castor (only one picking) (GC-2, GC-3)	Change plant geometry (RR 60 cm X PP 30 cm)	
	Clay loam soils	Greengram(K-851, RMG-62, RMG-268)	Greengram(K-851, RMG-62, RMG-268,)		

Contingency measures- Mid season

Mid season drought (long dry spell, consecutive rain less (>2.5 mm) period)	Sandy loam soils	Bajra	- Life saving irrigation should be done harvested rain water - Thinning of plants by 30-50 % - Weeding - In situ mulching of weeds	- Use weed as mulch - Spray 2 % Urea - Use of anti – transpirants like kaolin
		Moong	Weeding	Use of anti – transpirants like kaolin
		Sesame	Weeding	Use of anti – transpirants like kaolin
		Castor	- Life saving irrigation should be done harvested rain water - Thinning of plants by 30-50 % - Weeding - Insitu mulching of weeds	- Use weed as mulch - Spray 2 % Urea - Use of anti – transpiration like kaolin
	Clay loam soils	Maize	- Life saving irrigation should be done harvested rain water - Thinning of plants by 30-50 % - Weeding - Insitu mulching of weeds	- Use weed as mulch - Spray 2 % Urea - Use of anti – transpiration like kaolin
		Castor	- Life saving irrigation should be done harvested rain water - Thinning of plants by 30-50 % - Weeding - Insitu mulching of weeds	- Use weed as mulch - Spray 2 % Urea - Use of anti – transpiration like kaolin

Contingency measures- End of the season

Terminal drought (early with drawal of monsoon)	Sandy loam soils	Bajra	- Life saving irrigation should be done harvested rain water - Spray of 500ppm thiourea	If late season rain are there, after failure of kharif crops, rabi crops i.e. taramira, toriyaetc can be sown	
		Greengram	Harvesting at physiological maturity		
		Sesame	Harvesting at physiological maturity		
		Castor	- Life saving irrigation should be done harvested rain water - Spray of 500 ppm thiourea	If late season rain are there, after failure of kharif crops, rabi crops i.e. taramira, toriaetc can be sown	
	Clay loam soils	Maize	- Life saving irrigation should be done harvested rain water - Spray of 500 ppm thiourea - Harvested maize for green cobs	If late season rain are there, after failure of kharif crops, rabi crops i.e. taramira, toriaetc can be sown	
		Castor	- Life saving irrigation should be done harvested rain water - Spray of 500 ppm thiourea	If late season rain are there, after failure of kharif crops, rabi crops i.e. taramira, toriaetc can be sown	

Drought - Irrigated situation

Condition	Major Farming situation ^f	Normal Crop/cropping system	Suggested Contingency measures		
			Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delayed release of water in canals due to low rainfall	Sandy loam soils	Clusterbean/ sesame/Bajra/- Wheat/Mustard	Clusterbean/Greengram/sesame-wheat/barley/cumin Wheat: Raj-3077, Raj-4037, Raj-4120, Raj-3765, Raj-1482 Barley: RD-2592, RD-2552, RD—2052 Mustard: Laxmi, Rajat, Bio-902, NRC DR-2 Cumin: RZ-19, GC-4, RZ-209	Irrigation by pressurized irrigation system	
		Castor/fennel	Castor-bajra fodder Castor: GCH-4, GCH-5, GCH-7 Fennel: RF-101, RF-125, Abu sonf Bajra: Raj chari-1,2,3	Irrigation by pressurized irrigation system	
	Clay loam soils	Maize- Wheat/Mustard /Chickpea/Barley	Chickpea: GNG-469,RSG-888, RSG-973 Wheat: Raj-3077, Raj-4037, Raj-4120, Raj-3765, Raj-1482 Barley: RD-2592, RD-2552, RD—2052 Mustard: Laxmi, Rajat, Bio-902, NRC DR-2	Irrigation by pressurized irrigation system	
		Castor/fennel	Castor/fennel-bajra fodder Castor: GCH-4, GCH-5, GCH-7 Fennel: RF-101, RF-125, Abu sonf	Irrigation by pressurized irrigation system	

Condition			Suggested Contingency measures		
	Major Farming situation ¹	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
			Bajra: Raj chari-1,2,3		

Condition			Suggested Contingency measures		
	Major Farming situation	Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Non release of water in canals under delayed onset of monsoon in catchment's	Sandy loam soils	Clusterbean/ sesame/Bajra/-wheat/mustard	Clusterbean/moong/ sesame- wheat/barley/cumin	- Irrigation by pressurized irrigation system if water is available from other sources - Soil stirring for dust mulch - Weed removal - Use of anti transpirant i.e. Kaolin - Spray of urea at 2-3% as per recommendation - Spray of thio urea 0.1%	
		Castor/fennel	Castor-Bajra fodder	- Irrigation by pressurized irrigation system if water is available from other sources - Soil stirring for dust mulch - Weed removal - Use of anti transpirant i.e. Kaolin - Spray of urea at 2-3% as per recommendation - Spray of thio urea 0.1%	
	Clay loam soils	Maize- wheat/mustard /gram/Barley	Maize-wheat/mustard /gram/Barley	- Irrigation by pressurized irrigation system if water is available from other sources - Soil stirring for dust mulch - Weed removal - Use of anti transpirant i.e. Kaolin - Spray of urea at 2-3% as per recommendation - Spray of thio urea 0.1%	
		Castor/fennel	Castor/fennel-bajra fodder	- Irrigation by pressurized irrigation system if water is available from other sources - Soil stirring for dust mulch - Weed removal - Use of anti transpirant i.e. Kaolin - Spray of urea at 2-3% as per recommendation - Spray of thio urea 0.1%	

condition			Suggested Contingency measures		
	Major Farming situation ^f	Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	Sandy loam soils	No Sowing and water is used for drinking of Animals and other domestic use	If adequate moisture is available for germination sowing of crops i.e. Gram, Taramira in Tank beds	• Soil stirring for dust mulch • Weed removal • Use of anti transpirant i.e. Kaolin • Spray of urea @ 2-3% as per recommendation • Spray of thio urea 0.1%	Deepening of Tanks under NREGA if tanks are kept fallow
	Clay loam soils	No Sowing and water is used for drinking of Animals and other domestic use	If adequate moisture is available for germination sowing of crops i.e. Gram, Lentil, Taramira in Tank beds	• Soil stirring for dust mulch • Weed removal • Use of anti transpirant i.e. Kaolin • Spray of urea @ 2-3% as per recommendation • Spray of thio urea 0.1%	

Resource management technologies

- Tube well recharge technology for increasing the level and quality of ground water and availability of water for irrigation to crops.
- Roof water harvesting tanks for the year round safe water availability to animals and household activities.
- Deep summer ploughing for breaking of subsurface pan and facilitating in-situ water harvesting
 - for better germination of Kharif and Rabi crops.
- Green manuring of dhaincha for increased crop yields of wheat and reduce salinity hazard to crops.
- Application of gypsum to enhance the productivity and oil content of mustard crops.
- Drought tolerant varieties of bajra variety (RHB-173), guar (RGC-HG-2-20) and til (RT-351).
- Short duration guar variety (RGC-HG-2-20) to reduce the damage of long dry spells
- Crop diversification with remunerative crops like fennel by growing improved varieties i.e., RF-205, 101, 145 and 125 for higher profitability.
- Enhanced fodder availability by cultivation of fodder sorghum and berseem to increase milk productivity.

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	TONK
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	566.8	More than 19%	Less than 459.108
June	64.3		
July	206.1		
August	206.6		
September	89.8		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	375948	Gross irrigated area:	377959
Net Rainfed area	69302	Gross rainfed area	268526

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	60552	60560
Wells	258786	260386
Tanks	6858	6882
Other sources	49752	50131

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	7	6	1
2	Jowar	59613	1	59612
3	Maize	3598	1	3597
4	Bajra	41530	11	41519
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	9		9
2	Groundnut	19871	7	19864
3	Sesamum	3392	1	3391
4	Soyabean	439	11	428
5	Sunflower	-		
6	Castor	14		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	264	216	48
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	13	7	6
2	Tobacco	-		
3	Guar seed	1186		3971
4	Other Fodder crops	6159	2188	3971

Crop Plan- Beginning of the season

Condition	Suggested Contingency measures				
Early season drought (delayed)	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delay by 4 weeks (4 th week of July)	Deep brown loamy soils	Sorghum-Fallow	Greengram-fallow	Uprooting of weeds & Using the mass mulch Seed soaking with 0.1% thiourea	Seed source 1.NSSC 2.RSSC 3.NSP
		Sesamum-fallow	Cowpea-fallow		
		Greengram-fallow	No change		
	Medium brown	Sorghum-mustard	No change	Follow conservation	Seed source 1.NSSC
	Loamy soils	Urdbean-mustard	No change	Measures like mulch	2.RSSC 3.NSP)
		Sesame-gram	Cowpea-gram		
		Cotton-wheat	Urdbean-fallow		
		Cluster bean-wheat	Urdbean-fallow		

Contingency measures- Mid season

Condition	Suggested Contingency measures				
Midseason Drought (long dry spell, consecutive 2 weeks rainless (>2.5mm) period)	Major Farming situation	Normal Crop/cropping system	Crop management	Soils nutrient & Moisture conservation measures	Remarks on Implementation

At vegetative stage	Deep brown loamy soils	Sesamum	Removal of alternate rows	Hoeing & weeding to conserve moisture	Seed source 1.NSSC 2.RSSC 3.NSP 4. Water harvesting structure can be constructed under MANREGA
		Sorghum			-do-
		Clusterbean			Removal of alternate rows
	Medium brown Loamy soils	Sorghum		Spray of thiourea @ 500ppm to conserve the moisture	Seed source 1.NSSC 2.RSSC 3.NSP 4. Water harvesting structure can be constructed under MANREGA
		Sesamum			
		Pigeonpea			
		Cotton			

Contingency measures- End of the season

Condition	Suggested Contingency measures				
Terminal drought (Early withdrawal of monsoon)	Major Farming situation	Normal Crop/cropping system	Crop management	Rabi Crop planning	Remarks on Implementation
	Deep brown loamy soils	Sorghum	Spray of stress mitigating chemicals	Do not take rabi crop	Seed source 1.NSSC 2.RSSC 3.NSP 4. Water harvesting structure can be constructed under MANREGA
		Clusterbean			
		Kharif pulses			
	Rainfed medium Brown loamy soils	Sorghum			
		Sesamum			
		Pigeonpea			

Resource management technologies

- Tube well recharge technology for increasing the level and quality of ground water and availability of water for irrigation to crops.
- Roof water harvesting tanks for the year round safe water availability to animals and household activities.
- Deep summer ploughing for breaking of subsurface pan and facilitating in-situ water harvesting
 - for better germination of Kharif and Rabi crops.
- Green manuring of dhaincha for increased crop yields of wheat and reduce salinity hazard to crops.
- Application of gypsum to enhance the productivity and oil content of mustard crops.
- Drought tolerant varieties of bajra variety (RHB-173), guar (RGC-HG-2-20) and til (RT-351).
- Short duration guar variety (RGC-HG-2-20) to reduce the damage of long dry spells
- Crop diversification with remunerative crops like fennel by growing improved varieties i.e., RF-205, 101, 145 and 125 for higher profitability.
- Enhanced fodder availability by cultivation of fodder sorghum and berseem to increase milk productivity.

Actionable Comprehensive Plans for Contingency

State	RAJASTHAN	District	UDAIPUR
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Rainfall info (mm)

Month/season	Normal rainfall (mm)	Expected deficiency, %	Expected rainfall (mm)
June-Sep	617.7	More than 19%	Less than 500.337
June	77.1		
July	213.2		
August	203.8		
September	123.6		

Forecast probability for the season (as per IMD): Below Normal

Irrigation info:

Net irrigated area:	107215	Gross irrigated area:	110802
Net Rainfed area	44356	Gross rainfed area	161313

Source wise irrigation area details (ha)

Source of irrigation	Net	Gross
Canals	2479	2479
Wells	102897	106441
Tanks	1238	1275
Other sources	601	607

Crop Profile (Kharif)

Cereals

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Rice	2501	12	2489
2	Jowar	5706	23	5683
3	Maize	99729	600	99129
4	Bajra	58		58
5	Ragi	-		

Pulses & Oilseeds

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Arhar/ Redgram	1268		1268
2	Groundnut	1662	422	1240
3	Sesamum	250		250
4	Soyabean	19145	137	19008
5	Sunflower	-		
6	Castor	153		

Fibre

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Cotton	2659	1553	1106
2	Jute	-		

3	Mesta	-		
4	Sunhemp	-		

Other crops

S.No	Crop name	Total area (ha)	Irrigated area (ha)	Rainfed area (ha)
1	Sugarcane	188	179	9
2	Tobacco	-		
3	Guar seed	972		5951
4	Other Fodder crops	7504	1553	5951

Crop Plan- Beginning of the season

Condition			Suggested Contingency measures		
Early season drought (delayed onset)	Major Farming situation ^a	Normal Crop/cropping system ^b	Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Delay by 4 week July 4 th wk	Brown Loamy Medium to Deep Soils	Maize/sorghum for fodder or blackgram, greengram or sesame	Maize (fodder): African Tall, Pratap Makka Chari-6 Sorghum (fodder): Rajasthan Chari-1, Rajasthan Chari-2, Pratap Chari-1080, SSG-59-3 Greengram: K – 851, RMG – 62 Sesame: RT – 46, RT – 125, TC – 25 Blackgram: T– 9, PU-19, RBU-38	Increase in seed rate by 10 – 15 per cent in greengram, sesame and blackgram	Availability of breeder seed from University to seed producing agencies. Availability of certified seed from RSSC/NSSC, etc. Seed Drills under RKVY.
	Red Gravelly Loam Hilly Soils	Maize/sorghum for fodder or blackgram, greengram or sesame	Maize (fodder): African Tall, Pratap Makka Chari-6 Sorghum (fodder): Rajasthan Chari-1, Rajasthan Chari-2, Pratap Chari-1080, SSG-59-3 Greengram: K – 851, RMG – 62 Sesame: RT – 46, RT – 125, TC – 25 Blackgram: T– 9, PU-19, RBU-38	Increase in seed rate by 10 – 15 per cent in greengram, sesame and blackgram	
	Black Clayey Deep Soils	Maize/sorghum for fodder or blackgram, greengram or sesame	Maize (fodder): African Tall, Pratap Makka Chari-6 Sorghum (fodder): Rajasthan Chari-1, Rajasthan Chari-2, Pratap Chari-1080, SSG-59-3 Greengram: K – 851, RMG – 62 Sesame: RT – 46, RT – 125, TC – 25 Blackgram: T– 9, PU-19, RBU-38	Increase in seed rate by 10 – 15 per cent in greengram, sesame and blackgram	

Contingency measures- Mid season

Condition			Suggested Contingency measures		
Mid season drought (long dry spell, consecutive 2	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e

weeks rainless (>2.5 mm) period)					
At vegetative stage	Brown Loamy Medium to Deep Soils	Maize, Sorghum, Groundnut, Sesame and Blackgram	• 30 to 50% plant removal. • Weed free environment • Removal of susceptible crop for fodder (maize) and retain the hardy crop (urd) in maize blackgram inter cropping	• Earthing at 30 to 35 days after sowing. • Life saving irrigation from rainwater harvesting • Mulching in crop rows • Spray of kaolin at 5% • Spray of 1000 ppm thiourea • Ridging in maize	Availability of wheel hoe and power weeder for Inter-culture operations through RKVY.
	Red Gravelly Loam Hilly Soils	Maize, Sorghum, Groundnut, Sesame and Blackgram	• 30 to 50% plant removal. • Weed free environment • Removal of susceptible crop for fodder (maize) and retain the hardy crop (urd) in maize blackgram inter cropping	• Life saving irrigation from rainwater harvesting • Mulching in crop rows • Earthing at 30 to 35 days after sowing. • Spray of kaolin at 5% • Spray of 1000 ppm thiourea • Ridging in maize	Availability of wheel hoe and power weeder for Inter-culture operations through RKVY.
	Black Clayey Deep Soils	Maize, Sorghum, Groundnut, Soybean, Sesame and Blackgram	• 30 to 50% plant removal. • Weed free environment • Removal of susceptible crop for fodder (maize) and retain the hardy crop (urd) in maize blackgram inter cropping	• Life saving irrigation from rainwater harvesting • Mulching in crop rows • Earthing at 30 to 35 days after sowing. • Spray of kaolin at 5% • Spray of 1000 ppm thiourea • Ridging in maize	Availability of wheel hoe and power weeder for Inter-culture operations through RKVY.

Contingency measures- End of the season

Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Rabi Crop planning ^d	Remarks on Implementation ^e
	Brown Loamy Medium to Deep Soils	Maize, Sorghum, Groundnut, Sesame and Blackgram	• Harvest maize for green cobs if market is available • Life saving irrigation with	If late season rains are there, after failure of kharif crops, rabi crops i.e. tarumira/ toria/mustard can be sown	• Construction of farm ponds through NAREGA and RKVY • Crop insurance

			harvested rain water. • Harvesting groundnuts for green pods		
	Red Gravelly Loam Hilly Soils	Maize, Sorghum, Groundnut, Sesame and Blackgram	• Harvest maize for green cobs if market is available • Life saving irrigation with harvested rain water. • Harvesting groundnuts for green pods	If late season rains are there, after failure of kharif crops, rabi crops i.e. taramira/toria/mustard can be sown	
	Black Clayey Deep Soils	Maize, Sorghum, Groundnut, Soybean, Sesame and Blackgram	• Harvest maize for green cobs if market is available • Life saving irrigation with harvested rain water. • Harvesting groundnuts for green pods	If late season rains are there, after failure of kharif crops, rabi crops i.e. taramira/toria/mustard can be sown	

Drought - Irrigated situation

Condition	Suggested Contingency measures				
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Delayed release of water in canals due to low rainfall	Canal irrigated Brown Loamy Medium to Deep Soils	Maize-wheat/barley/gram/mustard	Short Duration Varieties Wheat- HI-1531, HI-1500, HI-8627, Raj-3777, Barley- RD-103, RD-2035, RD – 2052, RD - 2552 Gram – Pratap Chana – 1, ICCV – 10, Dahod Yellow Mustard: Laxmi, Bio – 902	•Sowing of short duration varieties. •25% increase in seed rate in wheat. •Irrigation by pressurized irrigation systems. (Sprinkler or drip) • Irrigation at critical growth stages •Thiourea spray at reproductive stage	If ponds is available sowing can be done by harvested water Create awareness among the farmers in respect of skills and technologies through KVK
		Cotton-wheat	-	•Irrigation by pressurized irrigation systems. (Sprinkler or drip) •25% increase in seed rate in wheat •Irrigation at critical growth stages	
		Groundnut-wheat/barley	-	-do-	
		Fallow/fodder-wheat/gram/mustard	-	-do-	

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Canal irrigated Red Gravelly Loam Hilly Soils		Maize/Sorghum-wheat/ Barley/Mustard	Short Duration Varieties Wheat- HI-1531, HI-1500, HI-8627, Raj-3777, Gram – Pratap Chana – 1, ICCV – 10, Dahod Yellow Mustard: Laxmi, Bio – 902	•Sowing of short duration varieties. •25% increase in seed rate in wheat. •Irrigation by pressurized irrigation systems(Sprinkler or drip systems) •Irrigation at critical crop growth stages	
		Cotton-wheat	Cotton-wheat	-do-	
		Maize-gram	Maize-gram	-do-	
		Kharif pulses-wheat	Kharif pulses-wheat	•Irrigation at critical stages. •Thiourea spray at reproductive stage.	

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Limited release of water in canals due to low rainfall	Brown Loamy Medium to Deep Soils	Maize-wheat/barley/gram/ mustard	Replace wheat by mustard and gram Inter cropping of gram + mustard (one row of mustard across the 4 m spacing)	• Irrigation by pressurized irrigation systems. • Irrigation at critical stages. • Thiourea spray at reproductive stage. • Weed free environment • Use of weeds as mulch • Spray of kaolin at 5 %	If ponds is available sowing can be done by harvested water Create awareness among the farmers in respect of skills and technologies through KVK
		Cotton-wheat	Cotton-wheat	-do-	
		Groundnut-wheat/barley	Groundnut-wheat/barley	-do-	
		Fallow/fodder-wheat/gram/ mustard	Fallow/fodder-wheat/gram/ mustard	-do-	
	Red Gravelly Loam Hilly Soils	Maize/Sorghum-wheat/ Barley/Mustard	Replace wheat by mustard and gram Inter cropping of gram + mustard (one row of mustard across the 4 m spacing)	• Irrigation by pressurized irrigation systems. • Irrigation at critical stages. Thiourea spray at reproductive stage. • Weed free environment • Use of weeds as mulch • Spray of kaolin at 5 %	
		Cotton-wheat	Cotton-wheat	-do-	
		Maize-gram	Maize-gram	-do-	
		Kharif pulses-wheat	Kharif pulses-wheat	-do-	

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Non release of water in canals under delayed onset of monsoon in catchment	Brown Loamy Medium to Deep Soils	Maize-wheat/barley/gram/mustard	If conserve moisture is available due to late season rainfall only gram, mustard and taramira can be grow	• Soil mulching by stirring • Weed free environment • Spray of kaolin at 5 %	Create awareness among the farmers in respect of skills and technologies through KVK
		Cotton-wheat	-do-	-do-	
		Groundnut-wheat/barley	-do-	-do-	
		Fallow/fodder-wheat/gram/ mustard	-do-	-do-	
	Red Gravelly Loam Hilly Soils	Maize/Sorghum-wheat/ Barley/Mustard	If conserve moisture is available due to late season rainfall only gram, mustard and taramira can be grown	• Soil mulching by stirring • Weed free environment • Spray of kaolin at 5 %	
		Cotton-wheat	-do-	-do-	
		Maize-gram	-do-	-do-	
		Kharif pulses-wheat	-do-	-do-	

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Lack of inflows into tanks due to insufficient /delayed onset of monsoon	Brown Loamy Medium to Deep Soils	Maize-wheat/barley/gram/mustard	If conserve moisture is available due to late season rainfall only gram, mustard and taramira can be grown	• Soil mulching by stirring • Weed free environment • Spray of kaolin at 5 %	Create awareness among the farmers in respect of skills and technologies through KVK
		Cotton-wheat	-do-	-do-	
		Groundnut-wheat/barley	-do-	-do-	
		Fallow/fodder-wheat/gram/ mustard	-do-	-do-	
	Red Gravelly Loam Hilly Soils	Maize/Sorghum-wheat/ Barley/Mustard	If conserve moisture is available due to late season rainfall only gram, mustard and taramira can be grown	• Soil mulching by stirring • Weed free environment • Spray of kaolin at 5 %	
		Cotton-wheat	-do-	-do-	
		Maize-gram	-do-	-do-	
		Kharif pulses-wheat	-do-	-do-	

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system ^h	Agronomic measures ⁱ	Remarks on Implementation ^j
Insufficient groundwater recharge due to low rainfall	Brown Loamy Medium to Deep Soils	Maize-wheat/barley/gram/mustard	Short Duration Varieties Wheat- HI-1531, HI-1500, HI-8627, Raj-3777, Barley- RD-103, RD-2035, RD – 2052, RD - 2552 Gram – Pratap Chana – 1, ICCV – 10, Dahod Yallow Mustard: Laxmi, Bio – 902	- Sowing of short duration varieties. - In situ mulching by weeds. - Irrigation by MIS - Irrigation at critical stages. - Kulfa interculture practices should be followed. - Thiourea spray at reproductive stage.	Percolation tanks may be dug out through NREGA or NABARD
		Cotton-wheat	-do-	-do-	
		Groundnut-wheat/barley	-do-	-do-	
		Fallow/fodder-wheat/gram/mustard	-do-	-do-	
	Red Gravelly Loam Hilly Soils	Maize/Sorghum-wheat/Barley/Mustard	Short Duration Varieties Wheat- HI-1531, HI-1500, HI-8627, Raj-3777, Barley- RD-103, RD-2035, RD – 2052, RD - 2552 Gram – Pratap Chana – 1, ICCV – 10, Dahod Yallow Mustard: Laxmi, Bio – 902	-do-	
		Cotton-wheat	-do-	-do-	
		Maize-gram	-do-	-do-	
		Kharif pulses-wheat	-do-	-do-	

Resource management technologies

- Tube well recharge technology for increasing the level and quality of ground water and availability of water for irrigation to crops.
- Roof water harvesting tanks for the year round safe water availability to animals and household activities.
- Deep summer ploughing for breaking of subsurface pan and facilitating in-situ water harvesting
 - for better germination of Kharif and Rabi crops.
- Green manuring of dhaincha for increased crop yields of wheat and reduce salinity hazard to crops.
- Application of gypsum to enhance the productivity and oil content of mustard crops.
- Drought tolerant varieties of bajra variety (RHB-173), guar (RGC-HG-2-20) and til (RT-351).
- Short duration guar variety (RGC-HG-2-20) to reduce the damage of long dry spells
- Crop diversification with remunerative crops like fennel by growing improved varieties i.e., RF-205, 101, 145 and 125 for higher profitability.
- Enhanced fodder availability by cultivation of fodder sorghum and berseem to increase milk productivity.