

State: GUJARAT

Agriculture Contingency Plan for District: DANGS

1.0 District Agriculture profile					
1.1	Agro-Climatic/Ecological Zone				
	Agro Ecological Sub Region (ICAR)	North Sahyadris and konkan coast hot humid eco sub region (19.1)			
	Agro-Climatic Zone (Planning Commission)	Gujarat plains and Hills region (XIII)			
	Agro Climatic Zone (NARP)	South Gujarat heavy rainfall area (GJ-1)			
	List all the districts or part thereof falling under the NARP Zone	Navsari, Valsad, Dangs and Tapi			
	Geographic coordinates of district headquarters	Latitude	Longitude	Altitude	
		20 ^o .75'91"N	73 ^o .68'89"E	875 mts	
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	Navsari Agricultural University, Tower Road, Navsari, Gujarat 396450			
	Mention the KVK located in the district	Dangs (Waghai)			
1.2	Rainfall	Normal RF(mm)	Normal Rainy days (number)	Normal Onset	Normal Cessation
	SW monsoon (June-Sep):	2611	80	2 nd week of June	4 th week of September
	NE Monsoon(Oct-Dec):	-----	----	-	-
	Winter (Jan- March)	-----	----	-	-
	Summer (Apr-May)	-----	-----	-	-
	Annual	2611	80	-	-

1.3	Land use pattern of the district (latest statistics)	Geographical area	Cultivable area	Forest area	Land under non-agricultural use	Permanent pastures	Cultivable wasteland	Land under Misc. tree crops and groves	Barren and uncultivable land	Current fallows	Other fallows
	Area ('000 ha)	173.5	53.1	102.2	12.6	0.26	-	-	3.8	1.5	-

(Source :District Panchayat reports, reports of Agriculture department)

1.4	Major Soils (common names like red sandy loam deep soils (etc.,))	Area ('000 ha)	Percent (%) of total
	1. Lateritic soil	86.7	50
	2. Hilly soil	86.7	50

* mention colour, depth, texture (heavy, light, sandy, loamy, clayey etc), and give vernacular name, if any, in brackets

1.5	Agricultural land use	Area ('000 ha)	Cropping intensity %
	Net sown area	57.8	150
	Area sown more than once	28.9	
	Gross cropped area	86.7	

(Source :District Panchayat reports, reports of Agriculture department)

1.6	Irrigation	Area ('000 ha)		
	Net irrigated area	3.6		
	Gross irrigated area	5.5		
	Rain fed area	59.4		
	Sources of Irrigation	Number	Area ('000 ha)	Percentage of total irrigated area
	Canals			
	Tanks			

Open wells	943	5.5	8.77
Bore wells			
Lift irrigation schemes			
Micro-irrigation			
Other sources (please specify)			
Total Irrigated Area		5.5	
Pump sets	1260		
No. of Tractors	74		
Groundwater availability and use* (Data source: State/Central Ground water Department /Board)	No. of blocks/ Tehsils	(%) area	Quality of water (specify the problem such as high levels of arsenic, fluoride, saline etc)
Over exploited			
Critical			
Semi- critical	1	100	good
Safe			
Wastewater availability and use			
Ground water quality			
*over-exploited: groundwater utilization > 100%; critical: 90-100%; semi-critical: 70-90%; safe: <70%			

1.7 Area under major field crops & horticulture (as per latest figures) (Specify year eg., 2008-09)

1.7	Major field crops cultivated	Area ('000 ha)							
		<i>Kharif</i>			<i>Rabi</i>			Summer	Grand total
		Irrigated	Rain fed	Total	Irrigated	Rain fed	Total		
	Paddy (Drilled)	-	3.5	18.8					18.8
	Paddy (T.P)	-	15.3						

Gram					14.1			14.1
Ragi	-	9.7	9.7					9.7
Ground nut							4.6	4.6
Wheat					4.5			4.5

Horticulture crops - Fruits	Area ('000 ha)		
	Total	Irrigated	Rain fed
Mango	2.350		2.350
Cashew	0.620		0.620
Custard apple	0.065		0.065
Banana	0.015		0.015
Sapota	0.015		0.015
Horticulture crops - Vegetables	Total	Irrigated	Rain fed
Bringal	0.360	0.360	
Okra	0.370	0.370	
Tomato	0.380	0.380	
Cucurbits	0.240	0.240	
Chilly	0.420	0.420	

	Medicinal and Aromatic crops	Total	Irrigated	Rain fed
	Safed Musli	0.055		0.055
	Plantation crops	Total	Irrigated	Rain fed
	Eg., industrial pulpwood crops etc.			
	Fodder crops	Total	Irrigated	Rain fed
	Total fodder crop area			
	Grazing land			
	Sericulture etc			
	Others (specify)			

(Source :District Panchayat reports, reports of Agriculture department)

1.8	Livestock	Male ('000)	Female ('000)	Total ('000)
	Non descriptive Cattle (local low yielding)	37846	22428	60074
	Crossbred cattle	1923	7937	9860
	Non descriptive Buffaloes (local low yielding)	15747	4980	20727
	Graded Buffaloes	-	-	-
	Goat	8409	21907	30313
	Sheep	3	14	17

	Others (Camel, Pig, Yak etc.)	138	119	257		
	Commercial dairy farms (Number)					
1.9	Poultry	No. of farms	Total No. of birds ('000)			
	Commercial		1715			
	Backyard		153189			
1.10	Fisheries (Data source: Chief Planning Officer)					
	A. Capture					
	i) Marine (Data Source: Fisheries Department)	No. of fishermen	Boats		Nets	Storage facilities (Ice plants etc.)
			Mechanized	Non-mechanized		
	ii) Inland (Data Source: Fisheries Department)	No. Farmer owned ponds		No. of Reservoirs	No. of village tanks	
	B. Culture					
		Water Spread Area (ha)		Yield (t/ha)		Production ('000 tons)
	i) Brackish water (Data Source: MPEDA/ Fisheries Department)					
	ii) Fresh water (Data Source: Fisheries Department)					
	Others					

(Source :District Panchayat reports, reports of Agriculture department)

1.11 Production and Productivity of major crops (Average of last 5 years: 2004, 05, 06, 07, 08; specify years)

1.11	Name of crop	Kharif		Rabi		Summer		Total		Crop residue as fodder ('000 tons)
		Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	
Major Field crops (Crops to be identified based on total acreage)										
	Paddy	43.5	2309					43.5	2309	
	Gram			16.9	1200			16.9	1200	
	Ragi	12.2	1265					12.2	1265	
	Ground nut							7.1	1550	
	Wheat			9.6	2150			9.6	2150	

Major Horticultural crops (Crops to be identified based on total acreage)										
	Mango	9.4	4.0					9.40	4.0	
	Cashew	0.93	1.5					0.93	1.5	
	Custard apple	0.65	10.0					0.65	10.0	
	Banana	0.45	30.0					0.45	30.0	
	Sapota	0.15	10.0					0.15	10.0	

(Source : District Panchayat reports, reports of Agriculture department)

1.12	Sowing window for 5 major field crops (start and end of normal sowing period)	Paddy	Gram	Ragi	Groundnut	Wheat
	Kharif- Rain fed	June15th to July 15 th		June15th to July 15 th	June15th to July 15 th	
	Kharif-Irrigated	June15th to July 15 th				
	Rabi- Rain fed		June15th to July 15 th			
	Rabi-Irrigated					November 10 th - December 31 st

1.13	What is the major contingency the district is prone to? (Tick mark)	Regular	Occasional	None
	Drought			√
	Flood			√
	Cyclone			√
	Hail storm			√
	Heat wave			√
	Cold wave			√
	Frost			√
	Sea water intrusion			√
	Pests and disease outbreak (specify)		√	
	Others (specify)			√

1.14	Include Digital maps of the district for	Location map of district within State as Annexure I	Enclosed: Yes
		Mean annual rainfall as Annexure 2	Enclosed: Yes
		Soil map as Annexure 3	Enclosed: No

2.0 Strategies for weather related contingencies

2.1 Drought

2.1.1 Rain fed situation

Condition	Major Farming situation	Normal Crop / Cropping system	Suggested Contingency measures		
			Change in crop / cropping system including variety	Agronomic measures	Remarks on Implementation
Early season drought (delayed onset) Delay by 2 weeks	Hilly and forest area (Sandy loam soil, poor fertile and susceptible to erosion)	Paddy	Vegetables, Wider spacing Conservation furrow Inter cultivation	Thinning Changes in nutrient application Sprouted seed sowing, mulching, alternate furrow irrigation in sugarcane	Seed drills under RKVY Supply of seeds through GSSC Supply of seeds through NFSM
		Gram	No Change		
		Ragi	No Change		
		Ground nut	No Change		
		Wheat	No Change		

Condition	This is not expected in this district				
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 (Specify month)					

Condition	This is not expected in this district				
Early season drought (delayed onset)	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delay by 6 weeks (Specify month)					

Condition	This is not expected in this district				
Early season drought (delayed onset)	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Delay by 8 weeks (Specify month)					

Condition			Suggested Contingency measures		
Early season drought (Normal onset)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Hilly and forest area (Sandy loam soil, poor fertile and susceptible to erosion)	Paddy	4.Thinning & gap filling 5.Application of water Intercultivation Weed control	Moisture conservation Conservation Furrow thinning	1.Supply of inter cultural implements through RKVY
		Gram			2.Seeds supply through NFSM
		Ragi			

		Ground nut			
		Wheat			

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	Hilly and forest area (Sandy loam soil, poor fertile and susceptible to erosion)	Paddy	Postponement of top dressing Removal of weeds	Interculturing and soil mulching Moisture conservation practices	As above
		Gram			
		Ragi			
		Ground nut			
		Wheat			

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)					
At flowering/ fruiting stage	Hilly and forest area (Sandy loam soil, poor fertile and susceptible to erosion)	Paddy		Weeding Weed mulch	Farm ponds through I W SM programme
		Gram			
		Ragi			
		Ground nut			
		Wheat			

Condition	This is not expected in this district				
	Major Farming situation	Normal Crop/cropping system	Crop management	Rabi Crop planning	Remarks on Implementation
Terminal drought (Early withdrawal of monsoon)	Hilly and forest area (Sandy loam soil, poor fertile and susceptible to erosion)	Paddy			
		Gram			
		Ragi			
		Ground nut			
		Wheat			

2.1.2 Drought - Irrigated situation :Not applicable

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					

Condition	Not applicable				
	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					

Condition	Not applicable				
	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					

Condition	Not applicable				
	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					

Condition	Not applicable				
	Major Farming situation	Normal Crop/cropping system	Change in crop/cropping system	Agronomic measures	Remarks on Implementation
Insufficient groundwater recharge due to low rainfall					

2.2 Unusual rains (untimely, unseasonal etc) (for both rain fed and irrigated situations)

Condition	Suggested contingency measure			
	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
Continuous high rainfall in a short span leading to water logging				
Paddy	Provide drainage	Provide drainage	Removal excess water Harvesting at physiological maturity stage	Shift to safer place
Gram	Provide drainage	Provide drainage	Drain out excess water Harvesting at physiological maturity stage and Harvest of pigeon pea for vegetable purpose	Shift to safe place dry in shade and turn frequently
Nagli (Ragi)	-do-	-do-	-do-	-do-
Ground nut	-do-	-do-	-do-	-do-
Wheat	-do-	-do-	-do-	-do-
Horticulture				
Mango	Provide drainage	Provide drainage	Need base insect pest management	Shift to safe place dry in shade and turn frequently
Cashew	Provide drainage	Provide drainage	Need base insect pest	Shift to safe place dry in

			management	shade and turn frequently
Custard apple	-do-	-do-	-do-	-do-
Banana	-do-	-do-	-do-	-do-
Sapota	-do-	-do-	-do-	-do-
Heavy rainfall with high speed winds in a short span				
Paddy	Provide drainage	Provide drainage	Wind break and shelter belt	Shift to safe place dry in shade and turn frequently
Gram	-do-	-do-	-do-	-do-
Ragi	-do-	-do-	-do-	-do-
Ground nut	-do-	-do-	-do-	-do-
Wheat	-do-	-do-	-do-	-do-
Horticulture				
Mango	Provide drainage	Provide drainage	Wind break and shelter belt	Shift to safe place dry in shade and turn frequently
Cashew	-do-	-do-	-do-	-do-
Custard apple	-do-	-do-	-do-	-do-
Banana	-do-	-do-	-do-	-do-
Sapota	-do-	-do-	-do-	-do-

Outbreak of pests and diseases due to unseasonal rains				
Paddy	Need based plant protection IPDM	Need based plant protection IPDM	Wind break and shelter belt	Safe storage against storage pest and diseases
Gram				
Ragi				
Ground nut				
Wheat				
Others				
Horticulture				
Mango	Need based plant protection IPDM	Need based plant protection IPDM	Wind break and shelter belt	Safe storage against storage pest and diseases
Cashew				
Custard apple				
Banana				
Sapota				

2.3 Floods

Condition	Not expected in this district			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Transient water logging/ partial inundation				
Horticulture				
Continuous submergence for more than 2 days				
Horticulture				
Sea water intrusion				

2.4 Extreme events: Heat wave / Cold wave/Frost/ Hailstorm /Cyclone

Extreme event type	Not expected in this district			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Heat Wave				
Crop1				
Horticulture				
Crop1 (specify)				
Cold wave				
Horticulture				
Frost				
Horticulture				
Hailstorm				
Horticulture				
Cyclone				
Horticulture				

2.5 Contingent strategies for Livestock, Poultry & Fisheries

2.5.1 Livestock

	Suggested contingency measures		
	Before the event ^s	During the event	After the event
Drought	Store the fodder by preparing hay and silage	Adopt stall feeding, Use manger, Urea treatment Of dry fodder.	Adopt scientific management practices
Feed and fodder availability	Rain water harvesting in underground tanks	Provide sufficient drinking water during summer	

Drinking water	Follow recommended vaccination	Mineral supplementation	
Health and disease management	Store the fodder by preparing hay and silage	Adopt stall feeding, Use manger, Urea treatment Of dry fodder.	Adopt scientific management practices
Floods	Not observed		
Feed and fodder availability			
Drinking water			
Health and disease management			
Cyclone	Not observed		
Feed and fodder availability			
Drinking water			
Health and disease management			
Heat wave and cold wave	Not observed		
Shelter/environment management			
Health and disease management			

2.5.2 Poultry: No commercial poultry exists

	Suggested contingency measures			Convergence/linkages with ongoing programs, if any
	Before the event	During the event	After the event	
Drought				
Shortage of feed ingredients				
Drinking water				
Health and disease management				
Floods				
Shortage of feed ingredients				
Drinking water				
Health and disease management				
Cyclone				
Shortage of feed ingredients				
Drinking water				
Health and disease management				
Heat wave and cold wave				
Shelter/environment management				
Health and disease management				

^a based on forewarning wherever available

2.5.3 Fisheries/ Aquaculture Not applicable

	Suggested contingency measures		
	Before the event	During the event	After the event
1) Drought			
A. Capture			
Marine			
Inland			
(i) Shallow water depth due to insufficient rains/inflow			
(ii) Changes in water quality			
B. Aquaculture			
(i) Shallow water in ponds due to insufficient rains/inflow			
(ii) Impact of salt load build up in ponds / change in water quality			
2) Floods			
A. Capture			
Marine			
Inland			
(i) Average compensation paid due to loss of human life			
(ii) No. of boats / nets/damaged			
(iii) No.of houses damaged			
(iv) Loss of stock			
(v) Changes in water quality			

(vi) Health and diseases			
B. Aquaculture			
(i) Inundation with flood water			
(ii) Water contamination and changes in water quality			
(iii) Health and diseases			
(iv) Loss of stock and inputs (feed, chemicals etc)			
(v) Infrastructure damage (pumps, aerators, huts etc)			
3. Cyclone / Tsunami			
A. Capture			
Marine			
(i) Average compensation paid due to loss of fishermen lives			
(ii) Avg. no. of boats / nets/damaged			
(iii) Avg. no. of houses damaged			
Inland			
B. Aquaculture			
(i) Overflow / flooding of ponds			
(ii) Changes in water quality (fresh water / brackish water ratio)			
(iii) Health and diseases			
(iv) Loss of stock and inputs (feed, chemicals etc)			
(v) Infrastructure damage (pumps,			

aerators, shelters/huts etc)			
4. Heat wave and cold wave			
A. Capture			
Marine			
Inland			
B. Aquaculture			
(i) Changes in pond environment (water quality)			
(ii) Health and Disease management			



ડાંગ જિલ્લો Dangs district



	રાજ્યધોરી માર્ગ - અન્ય માર્ગો
	નદી
	રેડીયો સ્ટેશન/ટી.વી. સ્ટેશન
	ગુજરાત ઈલેક્ટ્રીસીટી બોર્ડ
	પુલ/નાળા
	ડેમ
	માઈક્રોવેવ સ્ટેશન
	વન વિભાગ અને પોલીસ વિભાગના ચેક પોસ્ટ
	હુડબ્રેઈન ગોડાઉન



સિખાવ: (૦૨૦૧) ૮૫૫૨૫૨૯

