

DISTRICT CONTINGENT PLAN,BOUDH

KVK,BOUDH

YEAR 2026-27

KRISHI VIGYAN KENDRA, BOUDH

AT / PO :Paljhar, Boudh – 762026

ORISSA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

BHUBANESWAR - 751003

State: Odisha

State: **Odisha**

Agriculture Contingency Plan for District: Boudh

1.0 District Agriculture profile				
1.1	Agro-Climatic/Ecological Zone			
	Agro Ecological Sub Region (ICAR)	Sub-humid to humid Eastern & South eastern upland (12.1)		
	Agro-Climatic Zone (Planning Commission)	East coast plain & Hill Region (XI)		
	Agro Climatic Zone (NARP)	West Central table Land zone (OR-9)		
	List all the districts falling under the NARP Zone>(*>50% area falling in the zone)	Bargarh, Bolangir, Boudh ,Sonepur ,Parts of Sambalpur & Jharsuguda.		
	Geographic coordinates of district headquarters	Latitude	Longitude	Altitude
		20⁰ 43 51.69 to 20⁰ 45 16.16 N	84⁰ 13 52.22 to 84⁰ 13 56.27E	-
	Name and address of the concerned RRTTS	RRTTS, ChiplimaAt:-Satupali ,Po:- Chiplima ,Dist:- Sambalpur		
	Mention the KVK located in the district with address	KVK Boudh At:- Paljhar ,Po:Salunki, Dist:-Boudh, PIN- 762026		
	Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone	AMFU,RRTTS, ChiplimaAt:-Satupali ,Po:- Chiplima ,Dist:- Sambalpur.		

1.2	Rainfall	Normal RF (mm)	Normal Rainy days (number)	Normal Onset (specify week and month)	Normal Cessation (specify week and month)
	SW monsoon (June-Sep)	1167	47.2	2 nd week of June	2 nd week of October
	NE Monsoon(Oct-Dec)	84.3	4.7	2 nd week of October	4 th week of December
	Winter (Jan- Feb)	16.3	1.2	1 st week January	4 th week of February
	Summer (Mar-May)	71.3	4.4	2 nd week of May	4 th week of May

	Annual	1338.9	57.5	-	-
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1.3	Land use pattern of the district (2025)	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)	310	89	128	21	17	20	19	12	-	4

Source-Odisha Agriculture Statistic, 2023-24

1. 4	Major Soils (common names like red sandy loam deep soils (etc.,))*	Area ('000 ha)	Percent (%) of total
	1. Red& black soil (light, Loamy)	164.3	53
	2. Black soil (clayey, heavy)	96.1	31
	3. Red soil (light, Sandy)	49.6	16
	4.	-	-
	5.	-	-
	Others (specify):		

* (Source: SREP, Boudh)

1.5	Agricultural land use	Area ('000 ha)	Cropping intensity %
	Net sown area	89	182
	Area sown more than once	53	
	Gross cropped area	162	

1.6	Irrigation	Area ('000 ha)		
	Net irrigated area	31.11		
	Gross irrigated area	49.66		
	Rainfed area	37.8		
	Sources of Irrigation	Number	Area ('000 ha)	Percentage of total irrigated area
	Canals (Major & Medium)	2	31.55	47
	Minor project	52	12.8	19.08
	Tanks	43	1.129	1.683
	Open wells	3892	3.675	5.4

	Bore wells	236	472	0.01
	Lift irrigation schemes	192	12.06	17.954
	Micro-irrigation	-	-	-
	Other sources (WHS)	41	5.86	8.738
	Total Irrigated Area	-	151.78	-
	Pump sets	30	-	-
	No. of Tractors	107	-	-
	Source : District Agriculture Office, Boudh & Directorate of Agriculture & Food Production, Bhubaneswar, Orissa (2023-24)			
	Groundwater availability and use* (Data source: District Agriculture Office, Boudh	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	-	-	-
	Safe	3	100	-
	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., 2023-24)

1.7	Sl.No.	Major field crops cultivated	Area ('000 ha)									
			Kharif			Rabi			Summer			Grand total
			Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	
	1	Paddy	39.21	28.07	67.28	1.2	-	1.2	-	-	-	68.48
	2	Maize	-	0.89	0.89	1.0	-	1.0	-	-	-	1.89
	3	Moong	-	3.63	3.63	9.27	-	9.27	-	-	-	12.9

	4	Biri	-	3.77	3.77	1.93	-	1.93	-	-	-	5.7
	5	Sesamum	-	2.93	2.93	1.34	-	1.34	-	-	-	4.27

Source-Odisha Agriculture Statistic, 2015-16

Sl. No.	Block	Crop	Area					Production					Yield t/ha		
			Irrigated	%	Rainfed	%	Total	Irrigated	%	Rainfed	%	Total	Irrigated	Rain-fed	Average
1	Boudh	Mango	--	100%	1512 Ha	100%	1512 Ha	-	-	3031.48 MT	100%	3031.48 MT	-	2.34 MT	2.63 MT
2	Kantamal	Mango		100%	1090 Ha	100%	1090 Ha	-	-	1581.49 MT	100%	1581.49 MT	-	2.34 MT	2.63 MT
3	Harabhanga	Mango		100%	440 Ha	100%	440 Ha	-	-	700 MT	100%	700 MT	-	2.34 NT	2.63 MT
1	Boudh	Banana	150.73 Ha	100%	-	-	120 Ha	4400.93 MT	-	-	100%	4400.93 MT	23.12 MT	-	23.12 MT
2	Kantamal	Banana	29.07 Ha	100%	-	-	75 Ha	700.01 MT	-	-	100%	700.01 MT	23.12 MT	-	23.12 MT
3	Harabhanga	Banana	100.37 Ha	100%	-	-	100 Ha	1080.80 MT	-	-	100%	1080.80 MT	23.12 MT	-	23.12 MT
1	Boudh	Onion	864.77 Ha	100%	-	-	864.77 Ha	8123.40 MT	-	-	100%	8123.40 MT	11.02 MT	-	11.02 MT
2	Kantamal	Onion	179 Ha	100%	-	-	179 Ha	3100.02 MT	-	-	100%	3100.02 MT	11.02 MT	-	11.02 MT
3	Harabhanga	Onion	350.56 Ha	100%	-	-	350.56 Ha	4147.05 MT	-	-	100%	4147.05 MT	11.02 MT	-	11.02 MT

(Source: Horticulture Department, Boudh, 2024-25)

1.8	Livestock	Male ('000)	Female ('000)	Total ('000)
	Non descriptive Cattle (local low yielding)	119.136	104.997	224.133
	Improved cattle	5.161	5.865	11.026
	Crossbred cattle			
	Non descriptive Buffaloes (local low yielding)	18.579	20.245	38.824

	Descript Buffaloes	0.276	0.285	0.561			
	Goat	37.789	73.928	111.717			
	Sheep	27.439	42.262	69.701			
	Others (Pig,)	0.469	0.701	1.170			
	Commercial dairy farms (Number)	-	-	-			
1.9	Poultry	No. of farms	Total No. of birds (‘000)				
	Commercial	-	9.328				
	Backyard	-	166.577				
	Data source : District Veterinary Office, Boudh						
1.10	Fisheries						
	A. Capture						
	i) Marine	No. of fishermen	Boats		Nets		Storage facilities (Ice plants etc.)
			Mechanized	Non-mechanized	Mechanized (Trawl nets, Gill nets)	Non-mechanized (Shore Seines, Stake & trap nets)	
		-	-	-	-	-	-
	ii) Inland (Data Source: Office of ADF, Boudh)	No. Farmer owned ponds		No. of Reservoirs		No. of village tanks	
		513		26		1718	
	B. Culture						
			Water Spread Area (ha)	Yield (t/ha)	Production (‘000 tons)		
	i) Brackish water		-	-	-		
	ii) Fresh water (Data Source: Fisheries Department)		1020	2	2.04		
	Others						

Land Utilization Statistics (Year 2017-18, 2018-19, 2019-20) (Area in hectares)

Block	Year	Geographical area	Forest Area	Land Under Non-Use	Under agril.	Cultivable waste	Permanent pastures	Land under miscellaneous crops and groves	Current Fallows	Other Fallows	Net sown area	Gross cropped area	Cropping intensity (%)
Boudh	2017-18	106496	629	2625	4	2	2465	28	1	32368	46468	143	
	2018-19	106496	629	2625	4	2	2465	28	1	32368	46696	144	
	2019-20	106496	629	2625	3	2	2465	28	1	32396			
Harabhanga	2017-18	125076	50816	2385	3357	10692	4450	34	14921	25173	39811	158%	
	2018-19	125076	50816	2385	3357	10692	4450	34	14921	25173	39662	157	
	2019-20	125076	50816	2385	3323	10692	4450	34	14921	25207			
Kantamal	2017-18	125720	69213	3428	3649	3427	2500	1300	15626	27540	38160	138%	
	2018-19	125720	69213	3428	3649	3427	2500	1300	15626	27540	38198	139	
	2019-20	125720	69213	3428	3612	3427	2500	1300	15626	27577			
Total (District)		357292	182995	8438	7307	16255	9415	99	32431	85180	124439	146%	

1.11 Production and Productivity of major crops (2019-20)

1.11	Name of crop	Kharif		Rabi		Summer		Total		Crop residue as fodder ('000 tons)
		Product ion ('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)										
Crop 1	Rice	262.05	3895	4.03	3373	-	-	266.08	3886	-
Crop 2	Green gram	1.74	480	4.75	512	-	-	6.49	503	-
Crop 3	Black gram	1.75	465	0.92	479	-	-	2.67	468	-
Crop 4	Maize	1.28	1438	0.18	1606	-	-	1.46	1460	-
Crop 5	Sesamum	1.2	408	0.55	414	-	-	1.75	410	-

Major Horticultural crops (Crops to be identified based on total acreage)										
Crop 1	Onion	-	-	15370.47	11.02	-	-	15370.47	11.02	-
Crop 2	Potato	-	-	68.37	12.56	-	-	68.37	12.56	-
Crop 3	Chilli	74.2	10.06	-	-	-	-	74.2	10.06	-
Crop 4	Sweet potato	4393.94	9.16	0.12	4000	-	-	4393.94	9.16	-
Crop 5	Watermelon	-	-	-	-	23319.23	21.15	23319.23	21.15	-

(Source: Horticulture Department, Boudh, 2024-25)

1.12	Sowing window for 5 major field crops (start and end of normal sowing period)	1.Paddy	2.Arhar	3.Grengam	4.Black gram	5.Sesamum
	Kharif- Rainfed	3 rd week of June to 4 th week of July	3 rd week of June to 2 nd week of Aug	3 rd week of June to 2 nd week of Aug	3 rd week of June to 2 nd week of Aug	3 rd week of July to 4 th week of Aug
	Kharif-Irrigated	1 st week of July to 1 st week of August	-	-	-	-
	Rabi- Rainfed	-	-	2 nd week of Nov 1 st week of Dec	2 nd week of Nov to 1 st week of Dec	-
	Rabi-Irrigated	1 st week Jan to 2 nd week of Feb.	-	4 th week of Dec to 2 nd week of Jan.	4 th week of Dec to 2 nd week of Jan.	3 rd week of Jan to 2 nd week of Feb

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 (Aphids, Thrips& YMV infection in Pulses, Stem borer, Swarming caterpillar & incidence of Blast, Bacterial. Leaf blight in paddy. Wilt in Tomato .YMV in Cucurbits ,fruit& shoot borer &fruit rot in brinjal. Sucking pest in cotton, FAW in maize, pod borer complex in pigeonpea.	√		
	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: Yes

2.0 Strategies for weather related contingencies

2.1 Drought

2.1.1 Rainfed situation

Condition	Major Farming situation ^a	Normal Crop/ Cropping system ^b	Suggested Contingency measures		
			Change in crop/cropping system ^c including variety	Agronomic measures ^d	Remarks on Implementation ^e
Early season drought (delayed onset) Delay by 2 weeks (July 1st week) (REFER TO THE MATRIX TABLE)	1) Plain land irrigated- Upland	Sole crops - Paddy - Sesamum - Arhar - Green gram - Black gram - Kharif Vegetable	- Varietal substitution with short duration and draught tolerant rice variety like Khandagiri, Mandakini, Jyotirmayee, Improved Lalat, Binadhan -11, Swarna Shreya, Sahabthagidhan, Ankit, Bandana, Satyabhama, MTU-1056, MTU-1053. - Sesamum variety like Uma, Usha, Prachi, Nirmala, Smarak. - Arhar variety like LRG 52, ICPL-85063, UPAS-120, PRG-176. - Greengram variety like Virat, OUM-11-5, PDM-11, PDM-54. - Blackgram variety like Prasad, Ujala. - Groundnut variety like Smruti, Devi, TAG-24. - Intercropping of Arhar + G.nut (2:6) Maize + Cowpea (2:2) Arhar + G gram/ B.Gram (2:3)	- In-situ Rain water conservation through summer ploughing & inter cultural operation. - Bunding of unbunded upland. - Closure row & plant spacing. - Sowing of seeds across the slope.	- Supply of seeds through OSSC, ATMA, NFSM. - Supply of agricultural implements through OAIC, RKVY. - Rearing of Goatery & poultry for livelihood (Through veterinary department). - Mushroom cultivation & Vermicomposting through KVK, ATMA and Horticulture Department. - Composite Pisciculture and Integrated farming system through NREGS.
		Sole crops Brinjal	Brinjal variety like PKM-1, OUAT	Deep summer ploughing,	Supply of seeds through

		Cropping System 2 Paddy-Lathyrus Lathyrus local.	1, Sujata. • Blackgram variety: Ujala, Prasad, PU-19, PU-30, Sarala. • Medium – late duration paddy variety: Pratikshya, Ranidhan, Pooja, Swarna		• Feed and disease management by Fishery department.
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 3rd week)	Plain land irrigated-upland.	Sole crops • Paddy • Millet • Sesamum • Arhar • Green gram • Black gram • Kharif Veg.	• Varietal substitution with draught tolerant rice variety like Mandakini, Improved Lalat, Jogesh, Sidhanta, Khandagiri, Pathara, Fingermillet varieties like Arjun, Kalua, Bhairabi, Shreeratna. • Sesamum variety like Smarak, Uma, Usha, Prachi, Nirmala, Suprava. • Arhar variety like ICPL-85063, UPAS-120, LRG-52. • Greengram variety like Virat, OUM-11-5, PDM-11. • Blackgram variety like Prasad, Ujala, PU-31. • Groundnut varieties like Smruti, Devi, TAG-24, Kadiri Lepakshi, Vishishta.	• Insitu- water conservation measures through intercultural operations. • Bunding of unbunded upland. • Growing of short duration like Greengram, Blackgram, Sesamum.	• Supply of seeds through OSSC, ATMA, NFSM • Supply of agricultural implements through OAIC, RKVY.

			- Intercropping of Arhar + G.nut (2:6) - Maize + Cowpea (2:2) - Arhar + G gram/ B.Gram (2:3)		
		Brinjal, Okra	- Brinjal variety like Arka Keshav, Kashi Brinjal Green Round, Punjab Moti and PKM1. - Okra variety like Arka Anamika, Raadhika.	Use low water requiring short duration vegetable crops like Okra, Brinjal.	Supply of seeds through OSSC, Horticulture Department .
	2) Plain land irrigated and medium land	- Paddy - Paddy-Greengram/Blackgram	- Choosing medium duration paddy variety like Lalata, Manaswani, Konark, Jogesh, Surendra, MTU-1001, Naveen, CR DHAN 310, CR DHAN-311. - Greengram variety: Virat, PDM-11, PDM-54, OUM-11-5, TARM-1, Sujata. - B.Gram var. Ujala, Prasad, PU-19, PU-30, Sarala.	- Application of organic manure for moisture conservation. - Use of tractor and power tiller for quick puddling. - Growing of community nursery. - Transplanting by transplanter. - Cultivation of paddy through SRI method.	- Seed supply through OSSC. - Supply of tractor, power tiller and Transplanter through RKVY.
	(3) Plain land irrigated- Low land	- Paddy - Cropping system 1	- Swarna, Pratikshya. Ranidhan, Pooja, Kalachampa, MTU-1009, MTU-1224. - Medium – late duration paddy variety ,Pratikshya, Ranidhan, Pooja, Swarna. - Greengram variety : PDM-11, PDM-54, OUM-11-5, TARM-1, Sujata. - Blackgram variety :Ujala, Prasad, PU-19, PU-30, sarala. - Medium – late duration paddy	- Selection of medium late duration paddy variety like Pratikshya, Ranidhan, Pooja, Swarna - Application of organic manure for moisture conservation. - Use of tractor and	- Seed supply through OSSC - Supply of tractor, power tiller and transplanter through RKVY

		● Paddy-Greengram/Black gram. ● Cropping System 2 Paddy-Lathyrus. ● Composite Pisciculture in the farm pond.	variety: Pratikshya, Ranidhan, Pooja, Swarna. • Indian major carps- Rohu, Mrigal, Catla, Silver carp and Grass carp.	power tiller for quick puddling. • Grow community nursery. • Transplanting by transplanter. • Cultivation of paddy through SRI method .	
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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 6 weeks (August 1st week)	1) Plain land irrigated-upland	Sole crops • Sesamum • Arhar • Green gram • Black gram • Kharif Veg.	• Growing of non-paddy crops like sesamum, blackgram, greengram, vegetables, sweet corn , Maize. • Sesamum variety: Smarak,Uma, Usha, Prachi, Bimala. • Greengram: PDM-11,PDM-54, OUM-11-5,TARM-1, Sujata. • Blackgramvariety:Ujala, Prasad,PU-19, PU-30, Sarala.	• Apply full P₂O₅ ,K & 20 % of N₂ as basal along with FYM. • Early hoeing and weeding . • Application of weedicide pendimethalin @ 2.5 l/ha. • Spraying of 2 % KCl and 1% Boron	• Supply of herbicide and insecticide through NFSM.

		Sweet corn	- Cowpea: Utkal Manika - Sugar 75, Madhuri, Misti etc.	- in blackgram. - Foliar application of 2% urea at pre-flowering stage I Greengram. - Spraying of 1% urea in vegetable crops - Spraying of Rogor @1l/ha to control Aphids and Mealy bugs.	
		- Brinjal - Okra	Okra variety Arka Anamika, Utkal Gourav,	Apply recommended fertilizers in split doses such as full P_2O_5, K & 20 % of N_2 as basal along with FYM after receipt of rainfall.	Supply of pesticide through Department of Horticulture and KVK.
	2) Plain land irrigated and midland	- Paddy - Paddy-Greengram/Blackgram	- Cultivation of short-medium duration paddy variety Khandagiri, Lalata, Manaswini, Jogesh, Sahabhagi Dhan, Swarna shreya. - Greengram: PDM-11, PDM-54, OUM-11-5, Virat, TARM-1, Sujata. - Black gram variety:Ujala, Prasad,PU-19, PU-30, Sarala.	- Close drainage hole and checking of seepage loss in direct sown paddy. - Puddling through tractor and power tiller for quick transplanting.	
	3) Plain land irrigated and lowland	- Paddy - Cropping system 1 Paddy-Green gram/Black gram.	- Growing medium-late duration paddy variety like Lalata, Pratikshya, Ranidhan, Pooja, Swarna, Swarna sub 1. - Greengram: PDM-11, PDM-54, OUM-11-5, Virat, TARM-1, Sujata. - Black gram variety:Ujala,	- Use of tractor and Power tiller for quick land preparation. - Need based pesticide application against stem borer and blast. - Closer planting of 4-5 seedlings per hill.	Supply of pesticide through NFSM.

		● Cropping System 2 Paddy-Lathyrus.	Prasad,PU-19, PU-30, Sarala. ● Lathyrus-Local	● Apply full P,K and 50% N at the time of transplanting ● Close the drainage hole and check the seepage loss	
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Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
			Change in crop/cropping system ^c	Agronomic measures ^d	Remarks on Implementation ^e
Early season drought (delayed onset) Delay by 8 weeks (Aug 3rd week)	1) Plain land irrigated-upland	Sole crops ● Paddy ● Sesamum ● Arhar ● Green gram ● Black gram	● Growing of non-paddy crops like Sesamum, Blackgram, greengram, cowpea, okra. ● Sesamum: Uma, Usha, Prachi, Bimala. ● Greengram: PDM-11, PDM-54, OUM-11-5, TARM-1, Sujata. ● B.Gramvariety : Ujala, Prasad,PU-19, PU-30, Sarala .	● Apply full P₂O₅, K₂O & 20 % of N₂ as basal along with FYM. ● Early hoeing and weeding . ● Application of Weedicide Pendimethalin @ 2.5 l/ha. ● Spraying of 2 % KCl and 1% Boron in Blackgram. ● Foliar application of 2% urea at pre-flowering stage of Greengram. ● Spraying of Rogor @1 lit /ha to control aphids and Mealybugs.	● Supply of herbicide and insecticide through NFSM.
		● Kharif Veg. Brinjal	● Brinjal- Arka Nidhi, Niranjana Bhata, Utkal	● Spraying of 1% urea in vegetable crops	Supply of pesticide through Department of

		Okra	- Tarini, - Cowpea: UtkalManik - Okra: Arka Anamika, Utkal Gourav	Apply lifesaving irrigation when needed	Horticulture and KVK
	2) Plain land irrigated and midland	Paddy Paddy-Greengram/ Blackgram	- Growing of short duration paddy variety like Khandagiri, Yogesh, Vandana. - Greengram: PDM-11, PDM-54, OUM-11-5, TARM-1, Sujata - B.Gramvariety : Ujala, Prasad,PU-19, PU-30, Sarala	- Close drainage hole and checking of seepage loss in direct sown paddy - Puddling through tractor and power tiller for quick transplanting	
	3) Plain land irrigated and lowland	- Paddy - Cropping system 1 Paddy-Greengram/ Black gram - Cropping System 2 Paddy-Lathyrus - Composite Pisciculture in the farm fond	- Selection of medium duration paddy variety like Lalata, Manaswini, Konark, MTU-1010. - Greengram: PDM-11, PDM-54, OUM-11-5, TARM-1, Sujata. - B.Gram variety : Ujala, Prasad,PU-19, PU-30, Sarala. - Lathyrus-Local.	- Use of tractor and Power tiller for quick land preparation. - Need based pesticide application against stem borer and blast. - Closer planting of 4-5 seedlings per hill. - Apply full P,K and 50% N at the time of transplanting. - Close the drainage hole and check the seepage loss.	

Condition			Suggested Contingency measures		
Early season drought (Normal onset)	Major Farming situation ^a	Normal Crop/cropping system ^b	Crop management ^c	Soil nutrient & moisture conservation measures ^d	Remarks on Implementation ^e
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	1) Plain land irrigated- upland	Sole crops • Paddy • Sesamum • Arhar • Green gram • Black gram	• Cultivation of Ragi, Biri, Moong, Sesamum, Castor • Re-sowing of crop if there > 50 % mortality of plant	• Conserve rain water • Application of lime and FYM in acid soil as per recommended dose.	
		• Kharif Veg. -Ridge gourd, Bottle gourd, Sponge gourd, Pumpkin • -Okra • Fruit crops	• Use short duration vars. Of sole crops like Ridge gourd variety Pusa Nasdar, Kashi Shivani, Arka Prasan. • Brinjal variety Arka Shirish and Okra variety Arka Anamika, Utkal Gourav etc. • Cultivation of vegetable like cowpea, guar, okra, brinjal. • Inter cropping with arrowroot, yam in fruit orchard .	• Gap filling and re-sowing in area with poor germination . • Hoeing, weeding, earthing up at 20 DAS for moisture conservation.	
	2. Plain land irrigated and midland.	• Paddy • Paddy- Greengram/Blackgram	• Re-sowing of rice by punji method if plant population is less than 50% and cover it with FYM. • Higher seed rate 100- 120 kg / ha. • Sprouted seeds may be directly seeded or fresh seedling	• Cover sown seed with a mixture of FYM & SSP 10:1 ratio • Closing holes of bunds for checking water loss	

			transplanted. Weeding & khelua operation is carried out if there < 50 % mortality of plant.		
	3. Plain land irrigated and lowland	- Paddy - Cropping system 1Paddy-Greengram/Black gram - Cropping System 2 - Paddy-Lathyrus	- Sheath rot and sheath blight in rice is more common and control it by application of validamycin (0.3%) . - Raising of community nursery - Gap filling using same age of seedling. - Greengram: PDM-11, PDM-54, OUM-11-5, TARM-1, Sujata. - B.Gram variety : Ujala, Prasad, PU-19, PU-30, Sarala - Lathyrus-Local.	Apply greenleaf manure & FYM for water conservation .	

Condition	Major Farming situation ^a	Normal Crop/cropping system ^b	Suggested Contingency measures		
Mid-season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm) period)			Crop management ^c	Soil nutrient & moisture conservation measues ^d	Remarks on Implementation

At vegetative stage	1. Plain land irrigated-upland	Sole crops • Paddy • Sesamum • Arhar • Green gram • Black gram	• Post emergence application of Quizalofop ethyle @ 1 lit / ha to control weeds in ground nut. • Complete hoeing ,weeding in non-paddy crop. • Leaf miner in groundnut can be controlled by spray of Triazophus @ 2ml/ltr. • Plant protection for mealy bug &mites in brinjal by application of Dicofol 2ml/lit. • Foliar application of 2% urea at pre-flowering stage in Greengram to mitigate drought. • Termite control can be done by basal application of Chloropyriphos dust @ 25kg/ha. • YMV can be controlled by spray of Rogor @ 2ml/ltr. • Leaf blight in cucurbits can be controlled by application of Dithane M 45@ 3g/ltr.	• Inter cultivation • Conservation furrow • Compartmental bunding. • Follow strip cropping in rolling topography for moisture conservation.	
		• Kharif Veg. - Brinjal -Okra	• Spray of 1 % urea in vegetables • Spray of Planfix @ 10 ppm to control fruit drop in brinjal.	• Mulching with dry grass. • Thinning of excess plant to optimize plant population to reduce transpiration. • Ridge and furrow method of irrigation. • Spray of Kaolinetoreduce transpiration loss of water.	
	2) Plain land irrigated medium	• Paddy	• Weeding &gapfilling using seedling of same age	• Close drainage hole to preventseepage loss	

	land	Paddy-Greengram/Black gram	- Grasshoppers is controlled by application of chlorpyrifos dust @ 20 kg/ha. - Mealybugs can be controlled by spray of metasystox 2ml/l. - Blast is controlled by application of Tricyclozole @ 300g/ha. - Avoid topdressing of N fertilizer till receipt of rain fall.	- Measures to reduce runoff for groundwater recharge - Provide lifesaving irrigation	
	3) Plain land irrigated – lowland	- Paddy - Cropping system 1 Paddy-Greengram/Black gram - Cropping System 2 Paddy-Lathyrus - Composite Pisciculture in the farm pond	- No Beushaning if crop is more than 45 days - Transplanting of rice seedling of 45 to 60 days can be done without affecting yield - Use of puddler for quick puddling to save time	- Withhold N supply till rain starts. - Foliar application of 2% urea may be done. - Strengthen field bund and close drainage hole. - Provide lifesaving irrigation.	
Condition			Suggested Contingency measures		
Mid season drought (long	Major Farming situation^a	Normal Crop/cropping	Crop management^c	Soil nutrient & moisture conservation measures^d	Remarks on Implementation

dry spell)		system ^b			e
At flowering/ fruiting stage	1) Plain land irrigated- upland	Sole crops • Paddy • Sesamum • Arhar • Green gram • Black gram	• Foliar spray of 2 % urea at pre-flowering & post-flowering stage in green gram • Spray of Planofix @ 20 ppm to reduce flower & fruit drop in Black gram • Harvesting of Black gram and green gram at physiological maturity	• Spray of 2 % KCl & 0.1 ppm Boron in Black gram to overcome drought • Provide irrigation at critical stages i.e at flowering and grain filling • Soil moisture conservation measures may be followed • Harvesting at physiological maturity stage	
		• Kharif Veg. cucurbits like ridge gourd, bottle gourd - Brinjal - Okra	• Downy mildew in cucurbits can be controlled by application of Ridomil 2g/lit. • Bacterial wilt in brinjal can be controlled by soil drenching with Plantomycin 1g/lit.	• Foliar spray of 2 % potassium nitrate (KNO₃) to reduce drought stress	
	2) Plain land irrigated- medium land.	• Paddy Paddy-Green gram/ Black gram	• Provision of keeping standing water in the rice field during milking stage	• Apply Potash fertilizer basing on soil moisture	
	3) Plain land irrigated- low land.	• Paddy	• Weeding & plant protection measure for Blast can be undertaken. • Provision of keeping standing	• Apply Potash fertilizer basing on soil moisture • Strengthening of field bund to avoid loss of	

		● Cropping System 1 Paddy-Greengram/Black gram ● Cropping System 2 Paddy-Lathyrus ● Composite Pisciculture in the farm pond	water in the rice field during milking stage. ● Spraying of Malathion 1lit/ha to control Gundhibug. ● Dusting of Chloropyriphos dust @ 25 kg/ha to control cut worm.	water.	
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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) Plain land irrigated- upland.	Sole crops ● Paddy ● Sesamum ● Arhar ● Green gram	● Harvesting at physiological maturity stage. ● Sprinkling of water for uprooting groundnut. ● Cowpea, maize may be harvested for fodder purpose.		

		- Black gram - Kharif Veg. - Brinjal -Okra	Provide irrigation at critical stages of crops.		
	2. Plain land irrigated- medium land.	- Paddy - Paddy-Greengram/Blackgram	- Provision of keeping standing water at panicle initiation & grain filling stage - Horse gram, castor, niger, black gram can be grown in residual moisture	- Planning for pre-rabi crop - Check loss of water to recharge ground water - Greengram, Virat (PDM-54), Blackgram (Prasad)	Seed supply through OSSC and Agriculture deptt.
	3. Plain land irrigated-lowland.	Paddy Cropping System 1 Paddy-Greengram/ Black gram Cropping System 2 Paddy-Lathyrus Composite Pisciculture in the farm pond	- Follow relay cropping or paira cropping. - Provide lifesaving irrigation, from harvested rain water at reproductive stage. - Harvesting at physiological maturity stage of crop.	- Check loss of water. - Conserve moisture. - Planning for Pre-Rabi crop with residual moisture. - Utilization of residual moisture for early sowing of pre-Rabi crops like Greengram (PDM-54), Blackgram (Prasad).	

2.1.2 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	Plain land irrigated ¹) Lift	Vegetables	Cultivation of deep rooted vegetables like	Irrigation in alternate furrows	Supply of vegetable seeds through

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
canals due to low rainfall	Irrigated upland		Brinjal • Choosing indeterminate variety of tomato • Cultivation of short duration vegetables e.g.Cowpea,Okra.	• Mulching with dry leaves.	Horticulture department.
	2) Canal irrigated Medium land	Rice-Greengram.	• Selection of medium duration paddy variety like Lalata, Manaswini, Konark, MTU-1010.	• Lifesaving irrigation when needed.	
		Rice-Water melon .	• Selection of medium duration paddy variety like Lalata, Manaswini, Konark, MTU-1010. • Transplanting of watermelon seedlings raised in Polybag.	• Transplanting watermelon in ridge and furrow method.	
		Rice -Sunflower.	• Selection of medium duration paddy variety like Lalata, Manaswini, Konark, MTU-1010. • Ridge and furrow method of planting for sunflower.		
	3) Canal irrigated low land	Rice –Rice	• Selection of medium-late duration paddy variety like Swarna, Pooja, Pratikshya, Ranidhan. • Rabi rice area should be diverted to non-paddy crops.		

Condition			Suggested Contingency measures		
	Major Farming situation ^f	Normal Crop/cropping system ^g	Change in crop/cropping system	Agronomic measures ⁱ	Remarks on Implementation
Limited release of water in canals due to low rainfall.	Plain land irrigated1) Lift irrigated upland	Vegetables	• Cultivation of short duration vegetables e.g.Cucurbits, Cowpea,Okra.	• Irrigation in alternate rows. • Mulching with dry leaves.	
	2) Canal irrigated Mid land	Rice-Greengram	• Selection of medium duration paddy variety like Lalata, Manaswini, Konark, MTU-1010.	• Irrigation at flowering & pod setting stage.	
		Rice-Water melon	• Selection of medium duration paddy variety like Lalata, Manaswini, Konark, MTU-1010. • Transplanting of watermelon seedlings raised in polybag.	• Irrigation at critical stages. • Moisture conservation measures.	
		Rice -Sunflower	• Selection of medium duration paddy variety like Lalata, Manaswini, Konark, MTU-1010. • Ridge and furrow method of planting.	• Irrigation at critical stages. • Moisture conservation measures.	
	3.Canal irrigated low land	Rice-Rice	• Selection of medium-late duration paddy variety like Swarna, Pooja, Pratikshya, Ranidhan. • Rabi rice area should be diverted to non-paddy crops.	• Irrigation at critical stages • Check the loss of water from the rice field	

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	Plain land irrigated 1) Lift irrigated upland	• Cultivation of short duration sole vegetables e.g.Cowpea,Okra, Chilli.	● Vegetables like sponge gourd, Pumpkin. Cropping system like cow pea +okra , Chilli +Cow pea, Bottle gourd +Cow pea, Ridge gourd +Cow pea.	• Irrigation in alternate rows . • Mulching with dry leaves.	
	2) Canal irrigated Mid land	Rice-Greengram	• Cultivation of short duration pulses and vegetables.	• Irrigation at critical stages. • Moisture conservation measures may be followed.	
		Rice-Water melon	• Cultivation of short duration pulses and vegetables.		
		Rice -Sunflower	• Cultivation of short duration pulses and vegetables.	• Irrigation at critical stages. • Moisture conservation measures .	
	3.Canal irrigated low land	Rice -Rice	• Cultivation of short and medium duration paddy • Rabi rice area should be diverted to non-paddy crops.	• Irrigation at critical stages. • Moisture conservation measures .	

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	Plain land irrigated 1) Lift irrigated upland	• Cultivation of short duration sole vegetables e.g.Cowpea,Okra, Chilli	● Vegetables like sponge gourd, Pumpkin Cropping system like cow pea +okra , Chilli +Cow pea, Bottle gourd +Cow pea, Ridge gourd +Cow pea.	• Irrigation in alternate rows . • Mulching with dry leaves.	
	2) Canal irrigated Medium land	Rice-Greengram	• Cultivation of short duration pulses and vegetables.	• Irrigation at critical stages. • Moisture conservation measures may be followed.	
		Rice-Water melon	• Cultivation of short duration pulses and vegetables.	• Irrigation at critical stages. • Moisture conservation measures may be followed.	
		Rice -Sunflower	• Cultivation of short duration pulses and vegetables.	• Irrigation at critical stages. • Moisture conservation measures may be followed.	
	3) Canal irrigated low land.	Rice -Rice	• Cultivation of short and medium duration paddy. • Rabi rice area should be diverted to non-paddy crops.	• Irrigation at critical stages. • Moisture conservation measures may be followed.	

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

Condition	Suggested contingency measure			
Continuous high rainfall in a short span leading to water logging	Vegetative stage ^k	Flowering stage ^l	Crop maturity stage ^m	Post harvest ⁿ
Rice	• Drainage of excess water.	• Drainage of excess amount of water.	• Harvesting at 80 to 85 % grain maturity. • Drain out of excess water.	• Prevent wetting of grains to avoid germination. • Store after drying to safer moisture content • Shifting of produce to half cover threshing floor and other safer places for post harvest operation.
Greengram	• Provide drainage.	• Provide drainage • Spraying of chlorpyrifos @ 1l/ha to control Podborers.	• Drain out excess water, harvest at physiological maturity.	• Shifting of produce to half cover threshing floor and other safer places for post harvest operation. • cover the crop to protect from moisture absorption.
Black gram	• Provide drainage.	• Provide drainage • Spraying of chlorpyrifos @ 1l/ha to control Podborers.	• Drain out excess water, harvest at physiological maturity.	• Shifting of produce to half cover threshing floor and other safer places for post harvest operation. • cover the crop to protect from moisture absorption.
Arhar	• Provide drainage.	• Provide drainage • Spraying of chlorpyrifos @ 1l/ha to control Podborers.	• Drain out excess water, harvest at physiological maturity.	• Shifting of produce to half cover threshing floor and other safer places for post-harvest operation. • cover the crop to protect from moisture absorption.
Sesamum	• Provide drainage	• Provide drainage. • Spraying of chlorpyrifos @ 1lt./ha to control capsule borers.	• Drain out excess water, harvest at physiological maturity.	• Shifting of produce to half cover threshing floor and other safer places for post harvest operation. • cover the crop to protect from moisture absorption.
Horticulture				

Brinjal,	• Drainage of excess water.	• Drainage of excess water.	• Drainage of excess water.	• Cleaning, washing& wiping of produce to avoid losses.
Tomato,	• Drainage of excess water.	• Drainage of excess water.	• Drainage of excess water.	• Cleaning, washing& wiping of produce to avoid losses .
Okra,	• Drainage of excess water.	• Drainage of excess water.	● Drainage of excess water.	
Chilli	• Provide drainage.	• Soil drenching with Bavistin & Plantomycin. • Spray of Planofix to reduce flower drop (1ml in 4.5 l).	• Harvesting in rain free dry weather to reduce post-harvest loss Harvesting at proper maturity.	• Cleaning ,washing& wiping of produce to avoid losses.
Heavy rainfall with high-speed winds in a short span²				
Crop1				
Crop2				
Crop3				
Crop4				
Crop5				
Horticulture				
Crop1 (specify)				
Crop2				
Crop3				
Crop4				
Crop5				
Outbreak of pests and diseases due to unseasonal rains				
Rice	• Spray of	• Spray of	• Spraying of	• Sun drying of paddy seed & storing in air tight

	Tricyclazole to control Blast. • Spraying of validamycin @ 1.5 l/ha to control sheath blight. • Spraying of Chloropyriphos @ 1.0 l/ha to control swarming caterpillar.	Tricyclazole to control neck Blast • Spraying of Malathion @ 1.0 l/ha to control Gundhibugs.	@Chloropyriphos 1.0 l/ha during evening hour to control cutworm.	polybags.
Greengram	• Spraying of rogor @ 1 lit/ha to control aphids. • Dusting of Chloropyriphosd ust @ 25 kg/ ha to control hairy caterpillar.	• Spraying of Imidachloropid@ 5ml/ 15 lit water to control borers.		• Sun drying of seed & storing in air tight poly bags with dried neem leaves.
Black gram	• Spraying of rogor @ 1 lit./ha to control aphids • Dusting of Chloropyriphosd ust @ 25 kg/ ha to control hairy caterpillar.	• Spraying of chlorpyriphos@ 1.0 l/ha to control borers		• Sun drying of seed & storing in air tight poly bags with dried neem leaves.
Arhar	• Spraying of Triazophos @ 1.0 l/ha to control leaf eater.	• Spraying of chlorpyriphos@ 1.0 l/ha to control borers.	• Spraying of Malathion @ 1.0 l/ha to control Bruchid.	• Sun drying of seed & storing in air tight poly bags with dried neem leaves.
Sesamum	• Spraying of Chloropyriphos @ 1.0 l/ha to	• Spraying of Chloropyriphos@ 1 lit./ha to control leaf		• Sun drying of seed & storing in air tight poly bags

	control leaf roller and jassids.	roller and capsule borer.		
Horticulture				
Brinjal Tomato Okra Chilli	• Raising nursery in shade net house with 35-50 % shade net over nursery beds. • -Apply mulching (straw, dry grass, polythene mulch) to conserve moisture. • -Avoid transplanting during extremely hot period. • Soil drenching with Bavistin & Plantomycin to control wilt. • Spraying of Rogor @ 1.0 l/ha to control aphids and thrips.	• Spraying of Spinosad @ 0.5 ml/ltr. to control fruit borer. • Apply Blitox-50 @ 1.5 kg./ha for control of fruit rot in Brinjal. • Spraying of Rogor @ 1.0 ltr/ha to control aphids and thrips. • Apply Blitox-50 @ 1.5 kg / ha for control of dieback.	• Spraying of Triazophos @ 1.2 ml/lt. to control fruit & shoot borer.	• Cleaning, washing & wiping of produce to avoid losses. • Harvest vegetables in early morning hour or late evening hours to escape from field heat of produce. • Collect produce in shaded places immediately after harvest.
Mango, Guava	• Ensure proper drainage to avoid waterlogging around the root zone. • Spray preventive fungicides Copper	• Whitewash trunks with lime to reduce sunburn and support young plants in mango plants.	• Use sprinkler irrigation or water spraying during the hottest part of the day to reduce canopy temperature.	• Cleaning, washing & wiping of produce to avoid losses. • Collect produce in shaded places immediately after harvest.

	oxychloride 3g/ltr water as prolonged rainfall favors fungal diseases.			
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2.3 Contingent strategies for Livestock, Poultry & Fisheries

2.3.1 Livestock

	Suggested contingency measures		
	Before the event ^s	During the event	After the event
Drought			
Feed and fodder availability	1. Awareness of farmer to stock feed and fodder. 2. Encourage perennial fodder production. 3. Village gaucher lands should be developed. 4. On boundaries of agricultural field trees or shrubs like Sesbania, Subabul planted. 5. It is essential to establish fodder bank near forest areas. 6. Excess fodder in flush season can be preserved as hay/silage. 7. Explore the possibilities of alternative feed . 8. Organizing training Programme of persons connected with Animal Husbandry. 9. Livestock insurance.	1. Dry stray and feed to be given. 2. Utilizing fodder from perennial trees. 3. Transporting excess fodder from adjoining districts. 4. Utilizing the existing crops which fail to grow adequately due to failure of monsoon for feeding of animals. 5. Use of unconventional livestock feed such as sugarcane top, bagasse & banana plant . 6. Improving poor quality roughages by ammonia treatment, urea treatment & feeding them. 7. Supplementation of mineral mixtures and vitamin	1. Hay and silage to be given 2. Supplementary feeding of remaining livestock and the replacement stock.

Drinking water	1. Stocking of water in vat 2. Preserving water in community tanks	Supply of clean drinking water	Supply of clean drinking water
Health and disease management	Stocking of DNS,salt and molasses	1. Supply of RN-tose, DNS,Vit-B 2. Conducting animal health camps and treating the affected animals.	1. Rehydrate animals,common salt and molasses may be given 2. Proper disposal of dead animals
Floods			
Feed and fodder availability	1. Sensitization of farmer to stock and protect feed and fodder 2. Training to the farmers about care of their animals preparation and distribution of leaflets on livestock disaster.	1. Supply of crushed maize,ricebran,wheat bran etc. 2. Procured feeds and fodder should be fed to all animals 3. Straws and stoves that got soaked during floods can be fed to animals as long as rotting or fungal growth has not set.	1. Supply of crushed maize,ricebran,wheat bran etc. 2. Provision of supplementary feeding with vitamin and minerals
Drinking water	Stocking of clean drinking water	1. Arrangement for clean drinking water 2. Drinking water be made available to the animals in clean container	Chlorination of water and treatment with halogen tablets
Health and disease and shelter management	1. Vaccination. 2. Prior construction of animal shelters in disaster prone areas. 3. Temporary relief camps can be set up to provide shelter 4. Keep the emergency service kit like Cotton wool, Bandages, surgical gauze, Disinfectants like Potassium permanganate, Dettol, Antibiotic. 5. Temporary camps may be started for 25-50 animals in each group.	1. Treatment of sick animal. 2. There should be one veterinarian with 3 to 4 village to work . 3. The team should be well equipped with contingent items like bandages. 4. Keep the animals loose in paddock (sheltered or unsheltered) .	1. De-worming. 2. Prompt and appropriate attention to injured by providing necessary medicine. 3. Vaccination campaign against common endemic disease. 4. Improving shed hygiene especially in the farmers

	6. If no trees or sheds are available shelter the animals under a tent / tarpaulins.	5. Releasing animals from the unnatural and harmful position or situation stopping bleeding, binding broken limbs.	household through cleaning and disinfection.
Cyclone			
Feed and fodder availability			
Drinking water			
Health and disease management			
Heat wave			
Shelter/environment management	1. Awareness creation. 2. Green cover of trees. 3. Proper sheltering / housing with white painting outside. 4. Washing / wallowing / sprinkling or showering. 5. Provision of cool drinking water. 6. Cooling devices like fan, wet curtains and air cooler.	Shelter animal at cold windy and shady place.	-
Health and disease management	Stocking of DNS,salt and molasses.	Care of affected animal and should be over feed.	1. Rehydrate animals. 2. Common salt and molasses may be given.
Feed management	1. Feeding green fodder / silage/hay. 2. Provision for night feeding . 3. Graze early in the morning and late in the afternoon .		

^s based on forewarning wherever available, (Source: CDVO, Boudh)

2.3.2 Poultry

	Suggested contingency measures			Convergence/linkages with ongoing programs, if any
	Before the event ^a	During the event	After the event	
Drought				
Shortage of feed ingredients .	Ensure procurement of feed ingredients .	Feed supplementation will be made.	Attempt will be made for available of feed ingredient or compound feed to the farmers .	-
Drinking water.	Check water source for ensuring sufficient water .	Attempt will be made to provided sanitized drinking water.	Availability of water will be ensured by digging of bore well .	
Health and disease management.	Procurement of vaccines and medicines and antistress drugs, antibiotics .	Continue feeding of antistress drugs.		
Floods				
Shortage of feed ingredients .	Awareness of farmers to stock poultry feed.	Supply of poultry feed.	Supply of poultry feed.	Govt.Reliefprogramme.
Drinking water.	Chlorination of water.	Chlorination of water.	Chlorination of water.	-
Health and disease management.	Vaccination .	Treatment of sick Bird.	De-worming.	Govt.ReliefProgramme.
Cyclone				

Heat wave and cold wave				
Shelter/environment management.	1. Covering windows with wet gunny bag and thatching roof with straw. 2. Putting curtains on open sides of the shed. Procurement of electrical accessories. 3. Providing shed to poultry houses, Providing proper ventilation .	1. Covering windows with wet gunny bag and thatching roof with straw. 2. Attempt will be made for cooling of poultry shed. 3. Thickness of litter should be reduced. 4. Ventilation to the house should be increased by ceiling fans exhaust fan.	1. Covering windows with wet gunny bag and thatching roof with straw. 2. Provision should be made to ensure proper ventilation.	-
Health and disease management.	1. Vaccination. 2. Procurement of Antistress drugs.	1. Treatment of sick Bird. 2. Supplementati on of Antistress drug.	1. Deworming. 2. Vaccination of birds against RD.	Govt.ReliefProgramme.
Feed resources .	1. Procurement of high protein and low energy diet. 2. Procurement of medicine, Antistress drugs and vitamin C and E.	Feeding during cooler hour of the day. Supplementation of vitamin E and C, Antistress drugs with water	Feeding will be continued with high protein and low energy till heat waves ends.	

Water resources	Provision should be made for continuous available of water.	Sufficient cool drinking water with sodium bicarbonate or electrolytes.	Availability of cold water will be made for some days.	
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(Source: CDVO, Boudh)

2.3.3 Fisheries/ Aquaculture

	Suggested contingency measures		
	Before the event ^a	During the event	After the event
1)Drought			
A.Capture			
Marine	-	-	-
Inland			
(i)Shallow water depth due to insufficient rains/inflow	1. Reduction in stocking density,regulation of out flow of water. 2. Restricted release of water from reservoir. 3. Supplementary water harvesting structures like ponds and tanks has to be developed. 4. Renovation and maintenance of existing water harvest structures.	Harvesting table sized fish.	Restocking with yearlings.
(ii)Changes in water quality	1. Stocking of herbivorous fish and steps to minimize pollution. 2. Prepare to release water into the habitat.	1. Harvesting table sized fish. 2. Mixing of water from the water harvest structure like ponds and tanks into the fish habitat.	1. Restocking with yearlings. 2. Monitoring the water quality and health of aquatic organisms.

(iii)Any other	-	-	-
B.Aquaculture			
(i)Shallow water in ponds due to insufficient rains/inflow	1. Advised for production of yearling. 2. Building deep ditches in culture ponds for shelter of the fish to overcome high temperature.	1. Yearlings can be transferred to culture tank. 2. Recharge the ponds with bore well water . 3. Partial harvesting of the stock .	Pond preparation for yearling culture in next year.
(ii)Impact of salt load build up in ponds / change in water quality	Application of organic manure in culture system.	1. Provision for aeration and water sanitation. 2. Recharge the ponds with bore well water .	1. Feeding and manuring as usual. 2. Application of organic manure.
(iii)Any other			
2) Floods			
A.Capture			
Marine	-	-	-
Inland			
(i)No. of boats / nets/damaged	1. Flood warning to fisherman,repairing of dykes. 2. Non operation of fixed bag nets in streams and rivers. 3. Insurance coverage for nets and boats.	1. Advice the fisher man not to venture for fishing and take care of the implements. 2. Checking of the safety of the boats / nets. 3. Number of crew and load should be much below the marked tonnage.	1. Assessment of the damage and report to higher quarters. 2. Maintenance of nets.
(ii)No.of houses damaged	Insurance coverage for houses.	-	Settlement of insurance
(iii) Average compensation paid	1. Storage of sand filled bags for emergency use 2. Repair and maintenance of	1. Timely broadcast and telecast of danger level with respect to water level .	1. Relief operation will continue. 2. Financial support to other people.

	bunds 3. Preparedness for relief .	2. Relief operation.	
(iv) Loss of stock			1. Assessment of stock and replenishment . 2. Habitat restoration for the stock remaining.
(v)Changes in water quality	-	-	Application of lime.
(vi) Health and diseases	Water quality management and prophylactic treatment.	Mass treatment and isolation of diseased fish.	1. Restocking with yearling. 2. Observation of the health status of fish and accordingly control measure should be taken. 3. Control on transport of brooders and seeds.
B.Aquaculture			
(i)Inundation with flood water	1. Strengthening of dykes inlet and out let system. 2. Outlet and inlet facility should be their.	Net enclosure should be provided over the dyke to prevent the escape of fish from pond.	1. Incase of loss of stock restocking with yearlings or fingerlings. 2. Repairing and strengthening of dyke .
(ii)Water contamination and changes in water quality	Application of lime.	Steps to drain out excess water.	Application of Geolites, lime, Alum, KMnO_4 .
(iii) Health and diseases	Water quality management and prophylactic treatment.	Mass treatment and isolation of diseased fish.	1. Application of Geolites, lime, Alum, KMnO_4 . 2. Assessment of the health status of fish. 3. Control on transport of brooders and seeds.
(iv) Loss of stock and inputs (feed, chemicals etc)	1. Strengthening of dykes and keeping the inputs in safe.	1. Not to allow any fish to escape out with suitable	1. Stock assessment and restocking.

	2. Before flood the tock should be harvested. 3. Construction of flood shelter for pumps, aerators etc. 4. Transport of feed and chemicals to safer place. 5. Purchase of feeds and chemicals.	means. 2. Net enclosure shouldbeprovided over the dyke to prevent the escape of fish. 3. Water shouldbediveredfrom the main stream. 4. Sand bags cam beused for protection of dykes. 5. Storing of feed and chemicasl to safer place.	2. Repairing of dykes. 3. Assessment of quality of feed.
(v) Infrastructure damage (pumps, aerators, hutsetc)	Keeping all the implements in safer place.		Repairingofpumps, aerators& Damagedhut.
(vi) Any other	-	-	-
3. Cyclone / Tsunami	-	-	-
A.Capture	-	-	-
Marine	-	-	-
(i) Average compensation paid due to loss of fishermen lives	-	-	-
(ii) Avg. no. of boats / nets/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/hutsetc)			
(vi) Any other			
4. Heat wave and cold wave			
A. Capture			
Marine	-	-	-
Inland	-	1. During hot waves night fishing should be done. 2. Preservation by cold chain should be increased during hot waves.	-
B. Aquaculture			
(i) Changes in pond environment (water quality)	1. Maintaining the water level to optimum. 2. During hot waves adequate water depth should be maintained.	1. Provision for aeration and water sanitation. 2. During hot waves mixing of water with fresh water. 3. The culture system should be provided with aeration . 4. Partial harvesting can be done.	Provision for aeration and water sanitation.
(ii) Health and Disease management	1. Water quality management and prophylactic treatment. 2. Application of lime and turmeric .	1. Mass treatment and isolation of diseased fish. 2. Feeding should be stopped.	Restocking with yearling.

(iii) Any other			
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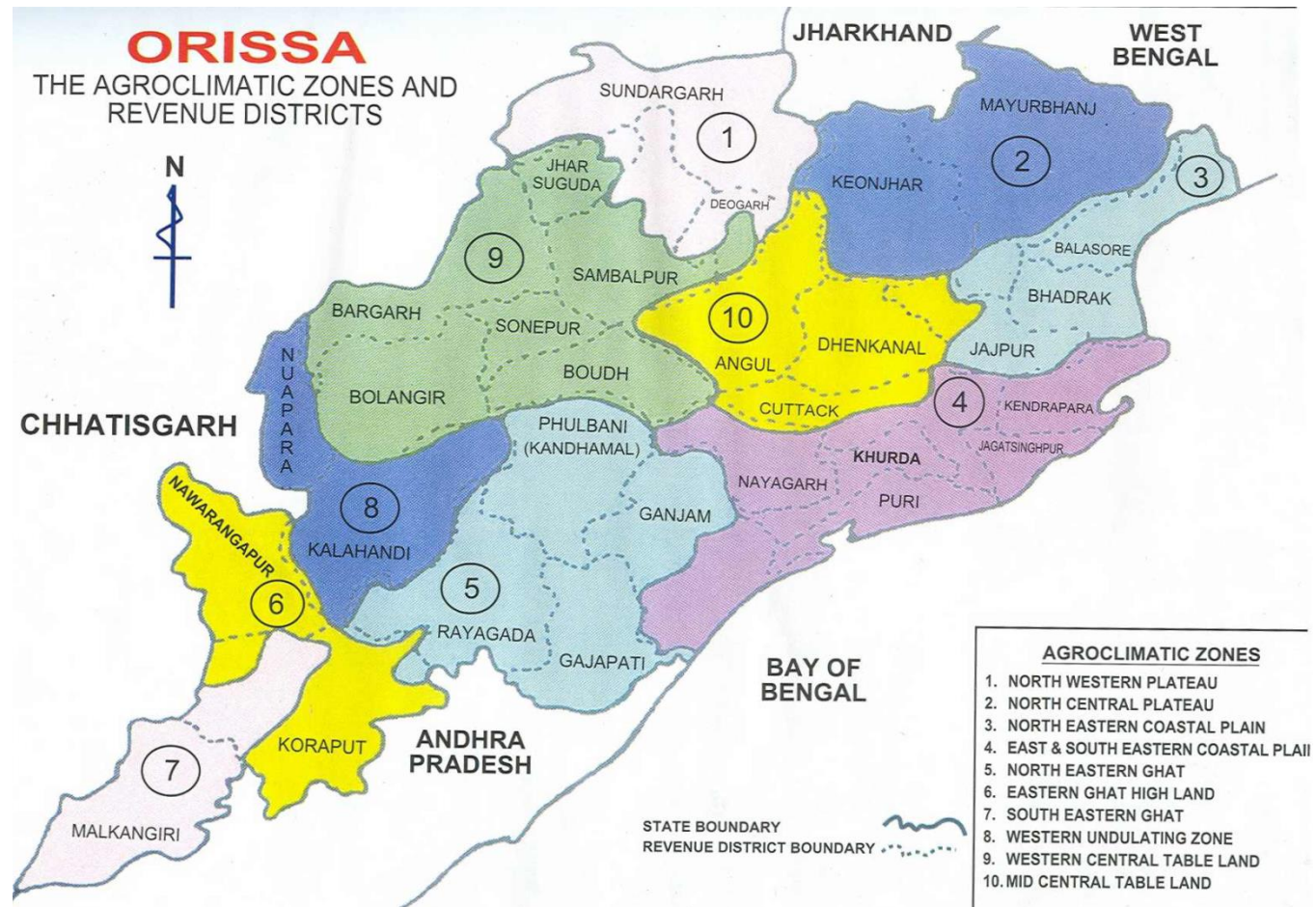
Source-Asst.Director Fishery Office,Boudh

Income generation Activity:

- ✓ Integrated Farm management to maximize income, resource use efficiency and sustainability
- ✓ Backyard poultry/broiler farming.
- ✓ Dairy farming for rural household.
- ✓ Scientific goat farming.
- ✓ Composite Fish culture.
- ✓ Scientific mushroom cultivation.
- ✓ Quality mushroom spawn production.
- ✓ Backyard rearing of improved coloured poultry birds.
- ✓ Carp fingerling production in seasonal pond.
- ✓ Vermicompost production.
- ✓ Community based nursery establishment of Paddy.
- ✓ Community based nursery establishment through pro tray technique.
- ✓ Cultivation of high value medicinal plants.
- ✓ Off season vegetable cultivation.
- ✓ Grafting technology of fruit crop plants.
- ✓ Bio –input production.
- ✓ Cultivation of flowers.
- ✓ Value added products of Millets & NTFP.
- ✓ Turmeric processing.
- ✓ Women SHG enterprises such as papad, badi, spices, chhatua preparation and vegetable cultivation.

A person who used to have skill with these income-generating activities through which she/he can increase the income and can change his/her socio economic empowerment status.

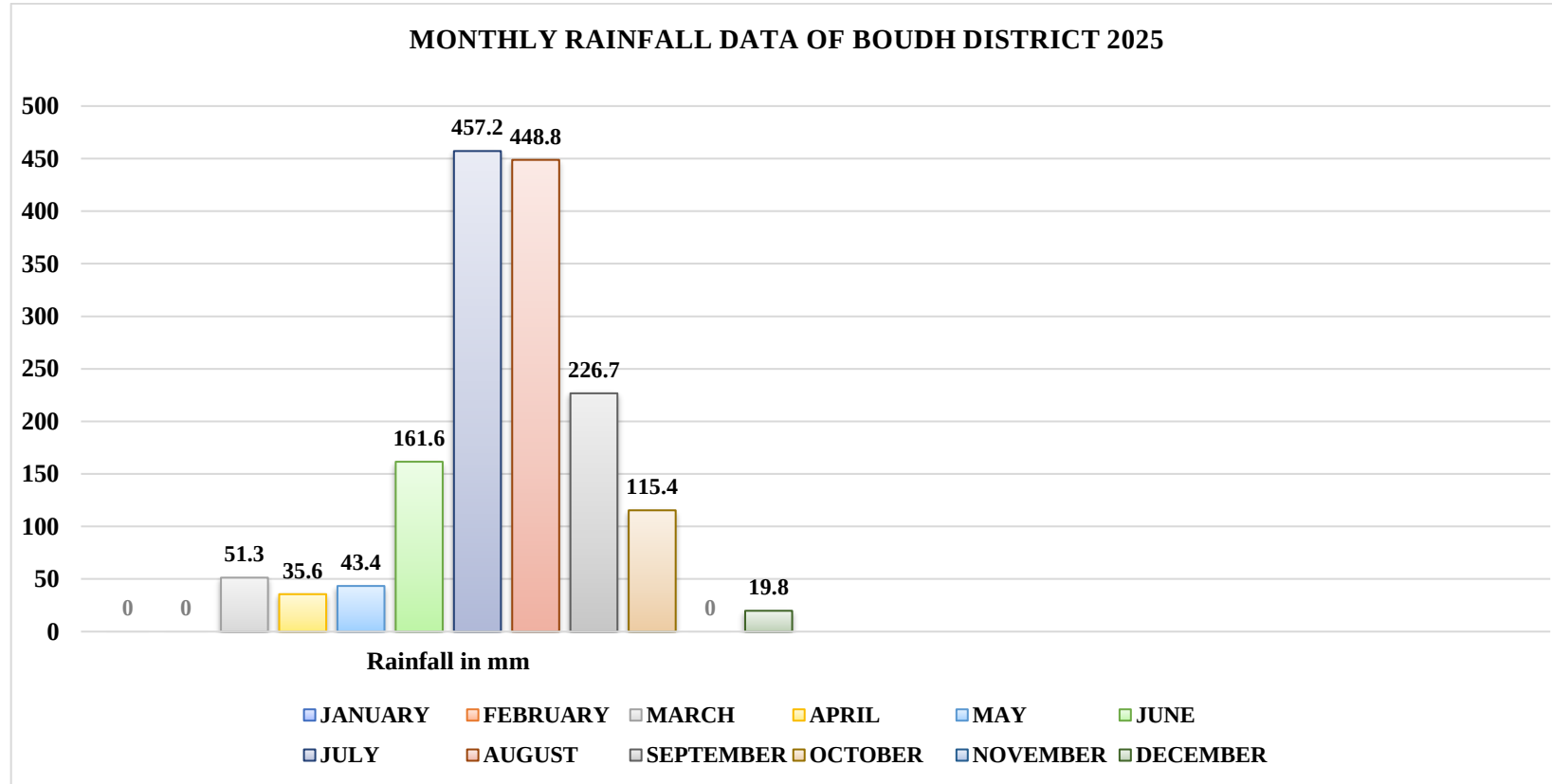
ANNEXURE-1 (a)



ANNEXURE-1 (b)

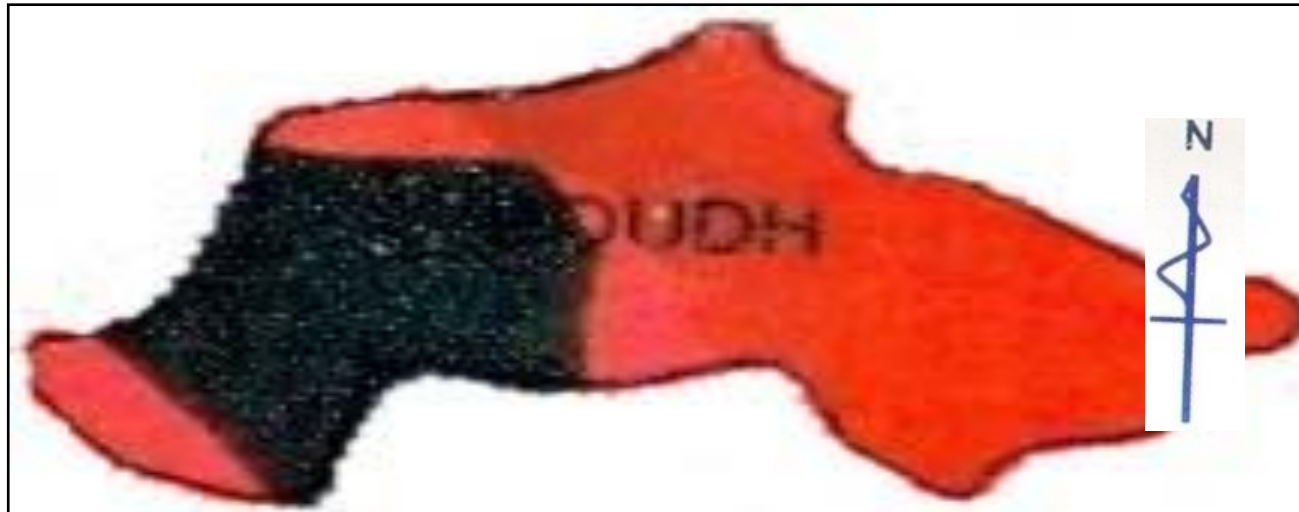


ANNEXURE-2



ANNEXURE-3

Soil map of Boudh District



Sd/-
Sr. Scientist & Head
KVK, Boudh