State: Mizoram

Agricultural Contingency Plan for District: Lawngtlai

1.0 District Agriculture profile*				
1.1	**Agro-Climatic/Ecological Zone**			
	Agro Ecological Sub Region (ICAR)	Purvanchal (Eastern Region) (17.2)		
	Agro-Climatic Zone (Planning Commission)	Eastern Himalayan Region		
	Agro Climatic Zone (NARP)	Humid Temperate Sub Alpine Zone Humid Sub-Tropical Hill Zone Humid Mild-Tropical Zone		
	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)	Nil		
	Geographic coordinates of district headquarters	**Latitude**	**Longitude**	**Altitude**
		92.30° – 93°E	21.58° - 22.60°N	747.37 m MSL
	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	ICAR Research Complex for NEH region, Umiam, Barapani, Dist. Ri-Bhoi – 793103, Meghalaya		
	Mention the KVK located in the district with full address	KVK, Lawngtlai District, Lawngtlai, Mizoram		
	Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone	Kolasib, AMFU, ICAR RC for NEHR Mizoram Centre, Kolasib, 796081		

*****State Meteorological centre, Directorate of Science and Technology, Mizoram

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):	1506	120	1ST week of June	Last week of September
	NE Monsoon(Oct-Dec):	156.7	39	1st week of October	2nd Week of December
	Winter (Jan- February)	2	19	1st week of January	last week of February
	Summer (March-May)	121.6	55	1st week of March	Last week of May
	Annual	**1786.3**	**233**	-	-

Source: State Meteorological centre, Directorate of Science and Technology, Mizoram 2017

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)	255.618	41.556	185.597	28.464	0.320	0.350	27.436	1.028	0.0767	-

Source: Directorate of Agriculture (Crop Husbandry), Government of Mizoram 2017-2018

1. 4	Major Soils (common names like red sandy loam deep soils (etc.,)*	Area ('000 ha)**	Percent (%) of total geographical area
	1. Red Soils	2.71	-
	2. Alluvial Soils	8.64	-
	3. Sandy Soils	2.63	-
	4. Laterite Soils	110.6	-
	5. Acid Soils	77.16	-
	Others (specify):		

Source: Directorate of Agriculture (Crop husbandry), Government of Mizoram 2017-2018

1.5	Agricultural land use	Area ('000 ha)	Cropping intensity %
	Net sown area	31.8	112%
	Area sown more than once	-	

	Gross cropped area	15.38	

1.6	**Irrigation**	**Area ('000 ha)**		
	Net irrigated area	2.478		
	Gross irrigated area	2.478		
	Rainfed area	3.463		
	Sources of Irrigation	**Number**	**Area ('000 ha)**	**Percentage of total irrigated area**
	Canals	3	0.020	0.8 (Diltlang, Chamdur)
	Tanks	40	-	-
	Open wells	10	-	-
	Bore wells	-	-	-
	Lift irrigation schemes	-	-	-
	Micro-irrigation	28	0.028	1.12 (Cheural, Sangau, Lawngtlai, Diltlang, Chawnhu, Bungtlang)
	Other sources (please specify)	-	-	-
	Total Irrigated Area	-	-	-
	Pump sets	16	-	-
	No. of Tractors	3	-	-
	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	-	-	-
	Safe	-	-	-
	Wastewater availability and use	-	-	-
	Ground water quality	-		

*over-exploited: groundwater utilization > 100%; critical: 90-100%; semi-critical: 70-90%; safe: <70%
Source: Directorate of Agriculture (Crop husbandry), Government of Mizoram 2017-2018

1.6. a.	Fertilizer and Pesticides use	Type	Total quantity (tonnes)
1	Fertilizers*	Urea	300
		DAP	400
		Potash	200
		SSP	
		Other straight fertilizers (specify)	
		Other complex fertilizers (specify)	
2	Chemical Pesticides*	Insecticides	0.1588
		Fungicides	112.51
		Weedicides	50.2
		Others (specify)	

* If break up is not available, indicate total quantity used in the district for any recent year, mention here the year and source of statistic

Source: Directorate of Agriculture (Crop husbandry), Government of Mizoram 2017-2018

1.7 Area under major field crops & horticulture (as per latest figures) (Specify year 2010-11 e.g., 2008-09)

1.7	S. No.	Major field crops cultivated	Area ('000 ha) (2017-18)							
			Kharif			*Rabi*				
			Irrigated	Rainfed	Total	Irrigated	Rainfed	Total	Summer	Grand total
	1	Paddy	-	5.337	5.337	-	0.137	0.137	-	**5.474**
	2	Maize	-	0.693	0.693	-	0.061	0.061	-	**0.754**
	3	Rice bean	-	0.103	0.103	-	-	-	-	**0.103**
	4	Cowpea	-	0.0825	0.0825	-	-	-	-	**0.0825**
	5	Soybean	-	0.119	0.119	-	-	-	-	**0.119**
	Others (specify)	Potato	-	0.056	0.056	-	0.029	0.029	-	**0.085**

Source: Directorate of Agriculture (Crop husbandry), Government of Mizoram

	S. No.	**Horticulture crops - Fruits**	**Area ('000 ha) (2016-17)**		
			Total	**Irrigated**	**Rainfed**
	1	Banana	0.489	-	0.489
	2	Mango	0.0785	-	0.0785
	3	Citrus	2.136	-	2.136
	4	Papaya	0.0605	-	0.0605
	5	Passion fruit	0.052	-	0.052
	Others (specify)				
		Horticulture crops - Vegetables	**Total**	**Irrigated**	**Rainfed**
	1	Cabbage	0.175	-	0.175
	2	Brinjal	0.113	-	0.113
	3	Ginger	0.6875	-	0.6875
	4	Turmeric	0.3375	-	0.3375
	5	Tomato	0.038	-	0.038
	6	French Bean	0.07875	-	0.07875
		Medicinal and Aromatic crops	**Total**	**Irrigated**	**Rainfed**
	1	**--**	--	-	-
	Others (specify)				
		Plantation crops	**Total**	**Irrigated**	**Rainfed**
	1	**Arecanut**	0.74272	-	0.74272
	Others (Specify)	Eg., industrial pulpwood crops etc.	--		
		Fodder crops	**Total**	**Irrigated**	**Rainfed**
	1	-	-	-	-
	2	-	-	-	-
	3	-	-	-	-
	4	-	-	-	-
	5	-	-	-	-
	Others (Specify)	-	-	-	-

		Total fodder crop area	-	-	-
		Grazing land, reserve areas etc	-	-	-
		Availability of unconventional feeds/by products eg., breweries waste, food processing, fermented feeds bamboo shoots, fish etc	-	-	-
		Sericulture etc Other agro enterprises (mushroom cultivation etc specify)	-	-	-
		Others (specify)	-	-	-

Source: Directorate of Horticulture, Government of Mizoram

1.8	**Livestock**	**Male ('000)**	**Female ('000)**	**Total ('000)**
	Indigenous cattle	1566	2036	**3.602**
	Improved / Crossbred cattle	89	165	**0.254**
	Buffaloes (local low yielding)	-	-412	**0.388**
	Improved Buffaloes	-	-	**-**
	Goat	-	-	**3.742**
	Sheep	-	-	**0.068**
	Pig	-	-	**29.030**
	Mithun	-	-	**-**
	Yak	-	-	**-**
	Others:1. Horse and Ponies 2. Dogs 3. Poultry with Ducks	-	-	**0.065** **5.973** **105.676**
	Commercial dairy farms (Number)	-	-	-

1.9	**Poultry**	**No. of farms**	**Total No. of birds ('000)**
	Commercial	-	**105.676**
	Backyard	-	

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	Mechanized (Trawl nets, Gill nets)	Non-mechanized (Shore Seines, Stake & trap nets)	
	ii) Inland (Data Source: Fisheries Department)	**No. Farmer owned ponds**		**No. of Reservoirs**		**No. of village tanks**	
		1789		-		-	
	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)			-		-	6.22
	Others						

19th Livestock census 2012

1.11 Production and Productivity of major crops (2017-18)

1.11	**Name of crop**	**Kharif**		**Rabi**		**Summer**		**Total**		**Crop residue as fodder ('000 tons)**
		Production (tons)	**Productivity (kg/ha)**	**Production (tons)**	**Productivity (kg/ha)**	**Production (tons)**	**Productivity (kg/ha)**	**Production (tons)**	**Productivity (kg/ha)**	
Major Field crops (Crops to be identified based on total acreage)										

Crop 1	Paddy	8759.06	1641.2	298.05	2175	-	-	9057.11	1654.56	-
Crop 2	Maize	1991.95	2700	174.48	2860.33	-	-	2166.43	2854	-
Crop 3	Pulses	294.87	942.67	310.4	1464.15	-	-	605.27	1153.335	-
Crop 4	Soyabean	151.87	1276.2	-	-	-	-	151.87	1276.2	-
Crop 5	Sugarcane	1852.86	34307.4	-	-	-	-	1852.86	34307.4	-
Others										

Source: Directorate of Agriculture (Crop Husbandry), Government of Mizoram 2017-2018

Major Horticultural crops (Crops to be identified based on total acreage) 2016-17

Crop 1	Potato	311.18	5560	168.44	5810	-	-	**479.62**	**5642.5**	
Crop 2	Mustard	1.26	630	7.56	630	-	-	**8.82**	**630**	
Crop 3	Cabbage	-	-	10.378	5930	-	-	**10.378**	**5930**	
Crop 4	Ginger	5.9235	8616	-	-	-	-	**5.9235**	**8616**	
Crop 5	Turmeric	2.138	6330	-	-	-	-	**2.138**	**6330**	
Others	-	-	-	-	-	-	-	-	-	

Source: Directorate of Horticulture, Government of Mizoram

1.12	**Sowing window for 5 major field crops** (start and end of normal sowing period)	**Paddy**	**Maize**	**Soyabean**	**Cowpea**	**Rice bean**
	Kharif- Rainfed	June 1st Week – July 2nd Week	April 2nd Week – May 2nd Week	June 1st Week – July 2nd Week	April 2nd Week – May 2nd week	April 2nd Week – May 2nd week
	Kharif-Irrigated	June 1st Week –	-	-	-	-

		July 2nd Week				

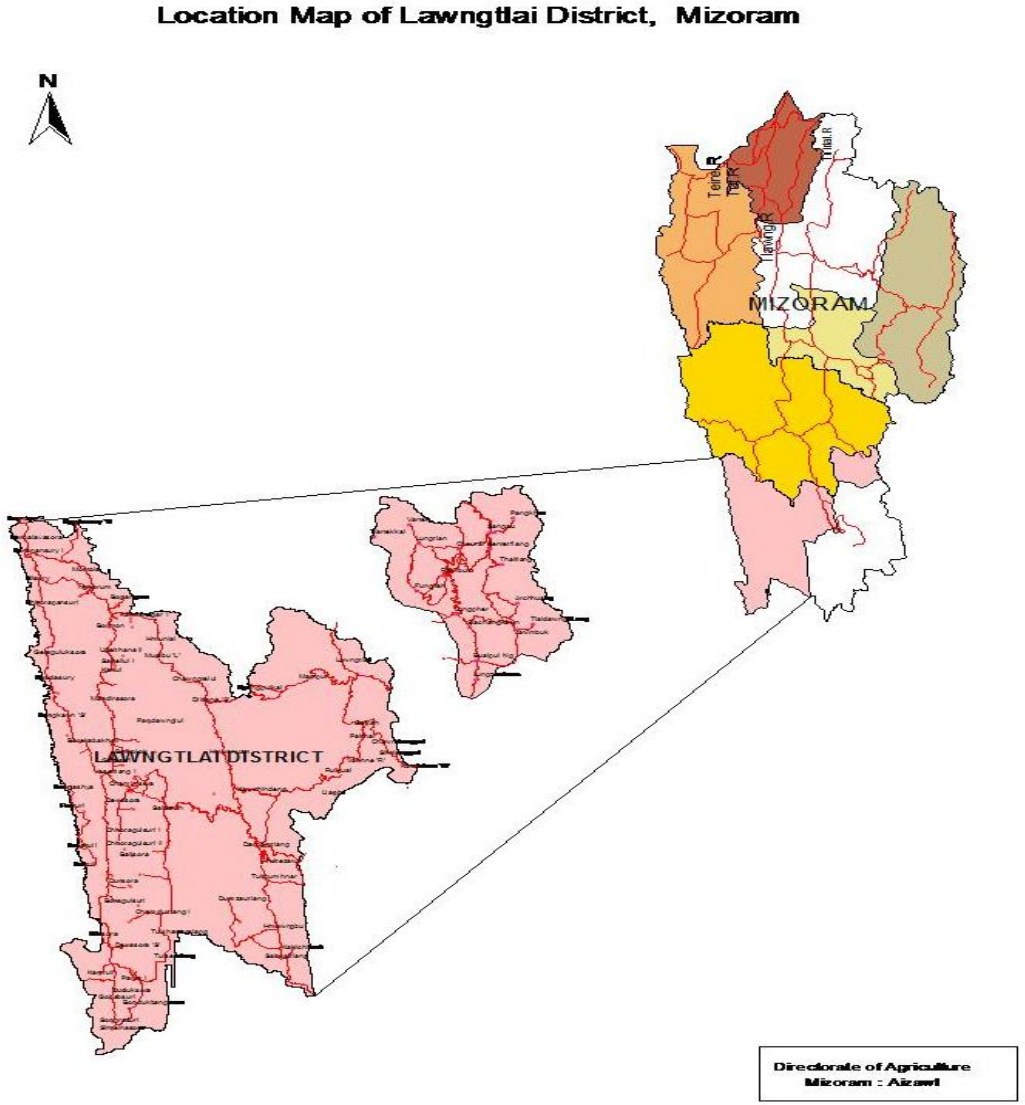
1.13	**What is the major contingency the district is prone to?** (Tick mark)	**Regular***	**Occasional**	**None**
	Drought		✓	
	Flood			
	Cyclone		✓	
	Hail storm			
	Heat wave			
	Cold wave			
	Frost			
	Sea water intrusion			
	Snowfall			
	Landslides	✓		
	Earthquake		✓	
	Pests and disease outbreak (specify)	✓		
	Others (like fog, cloud bursting etc.)			

*When contingency occurs in six out of 10 years

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

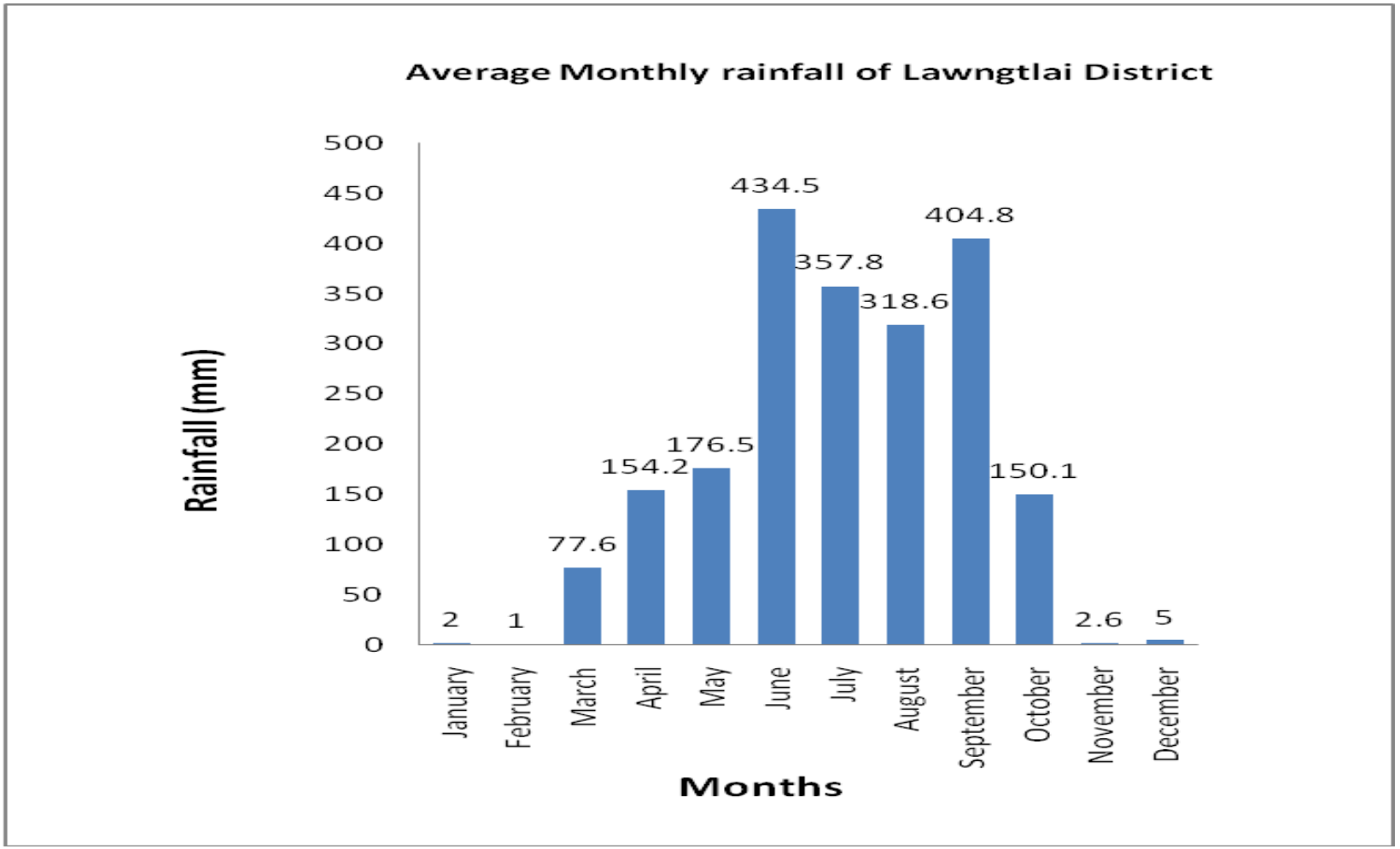
Annexure I

Location Map of Lawngtlai District

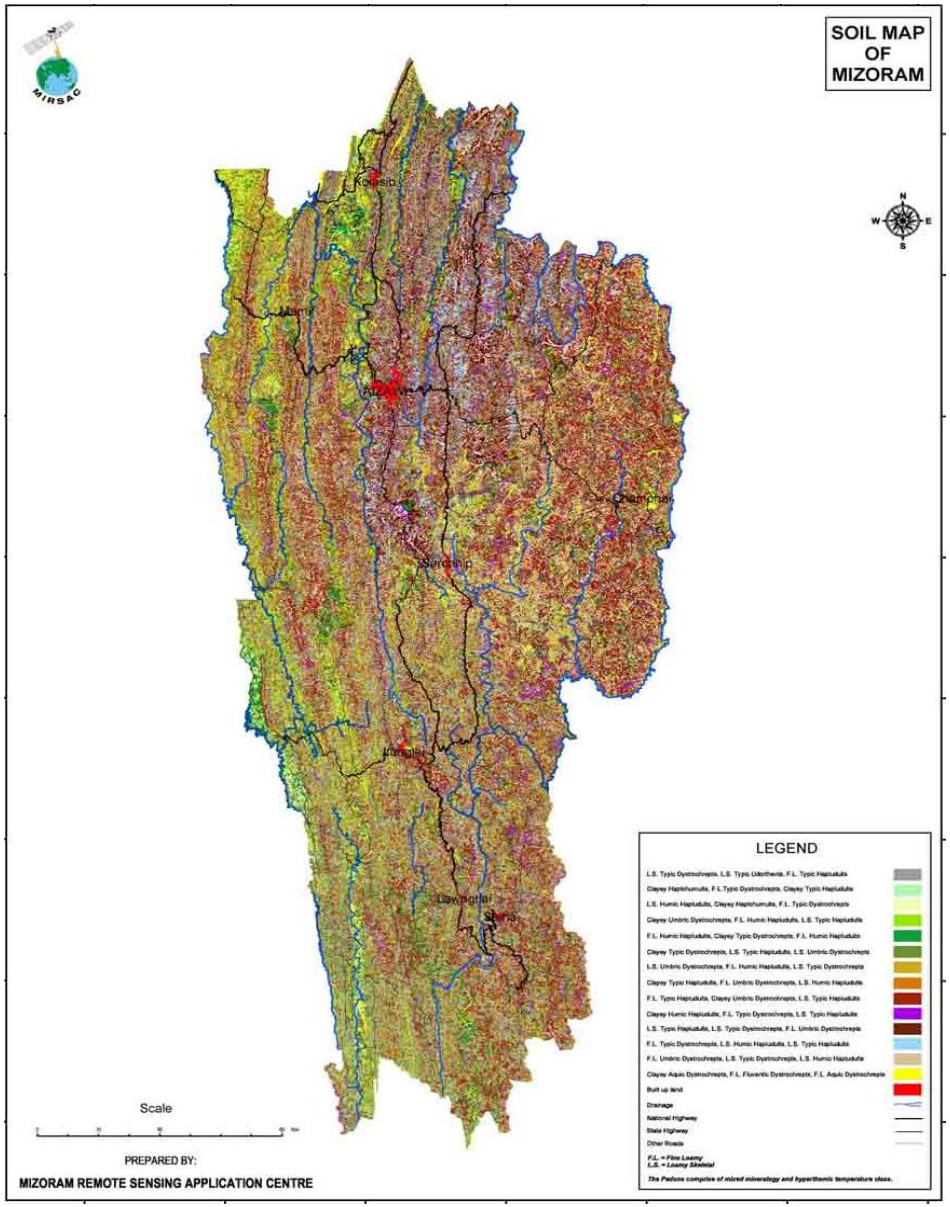


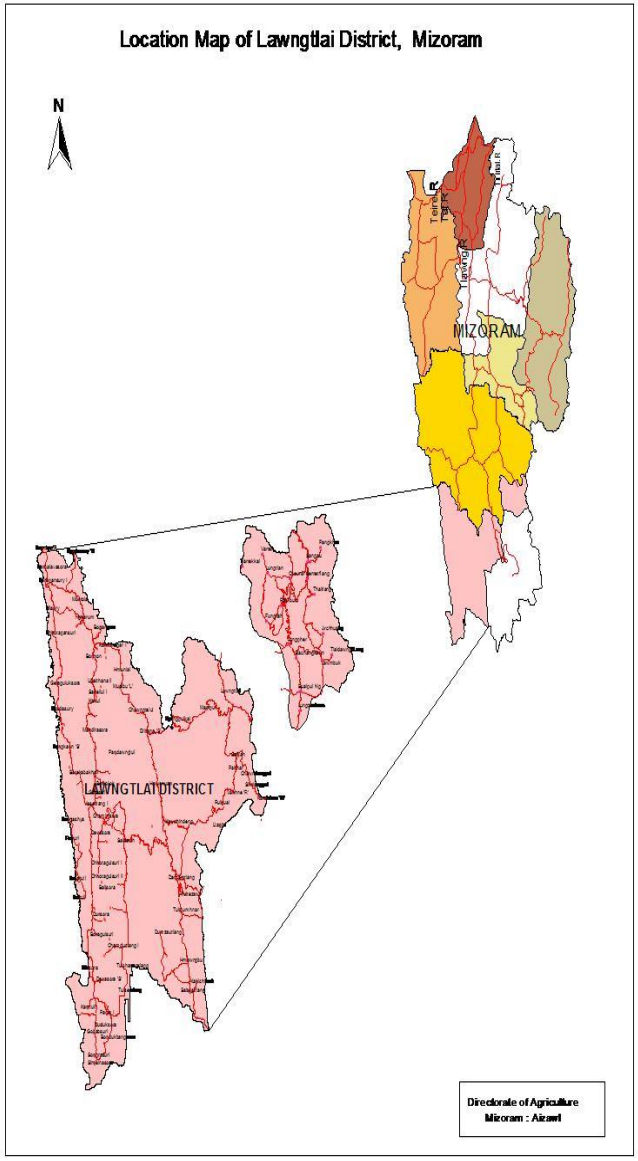
Annexure II

Mean Annual Rainfall of Lawngtlai District (2017-18)



Annexure III
Soil Map of Mizoram





2.0 Strategies for weather related contingencies

2.1 Drought

2.1.1 Rainfed situation (*maintain separate rows for each cropping system*)

Condition			**Suggested Contingency measures**		
Early season drought (delayed onset)	**Major Farming situation[a]**	**Normal Crop / Cropping system[b]**	**Change in crop / cropping system[c] including variety**	**Agronomic measures[d]**	**Remarks on Implementation[e]**
Delay by 2 weeks (June 3rd week)	1) Jhum/rainfed upland	1: Jhum land 2. Paddy (CAU R1)+ Maize (HQPM 1)+ Pumpkin + Chilli (bird's eye chilli)+ Sesamum (chhibung)	No change	--	--
		2: Ginger (Thingpui) (Sole crop)	No change	--	
		3: Bird's eye chilli (Sole Crop)	No change	--	
		4: Rice based	No change	--	
	2)Terrace / lowland with no irrigation facility	1. Rice	No change	--	
		2. Pineapple (Queen) Mandarin Orange, Banana (Cavendish)	No change	--	--
		1. Rice	No change	--	--
	3) Lowland with irrigation facility	Rice	No change	--	--
	4) Rainfed low land	Rice	No change	--	--

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 1st week)	1) **Farming situation: upland**	1 : Rice (CAU R1)	Short duration variety (IR 64) of crops . No change of usual cropping practices.	Mulching with bio-mass and waste materials	
		2 : Ginger (Thingpui)	No change of usual cropping practices.	Earthing up, mulching with waste materials	
		3 : Bird's eye chilli	No change of usual cropping	Mulching, Earthing up	

			practices.		
	2) Terrace/medium land with no irrigation facility	1 : Rice (CAU R1)	No change of usual cropping practices.	Deep ploughing, application of manures, Application of pre-emergence weedicides	Rain water harvesting structures
		2 : Banana, pineapple, sugarcane, Mandarin Orange	No change of usual cropping practices.	Application of organic manure mulching with available bio-mass, earthing up	Rain water harvesting structures
	3) Low land with irrigation facility	1 : Rice (Cau R1)	No change of usual cropping practices. Short duration varieties like IR 64 by S.R.I method	Application of organic manure, apply weedicides	Late sowing
	4) Low land without irrigation facility	1: Rice (Local variety)	Planting of Short duration varieties like IR 64	Application of organic manure, Mulching with available bio-mass, earthing up	Rain water harvesting structures

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 (July 3rd Week)	1) **Farming situation: rainfed / upland**	1 : Rice	NA	NA	
		2 : Ginger	NA		
		3 : Bird's eye chilli	NA	NA	
	2) Terrace / medium land with no irrigation facility	1 : Rice	NA	NA	
		2 : Banana, pineapple, sugarcane, Mandarin Orange	NA	NA	
	3) Low land with irrigation facility	1 : Rice	NA	NA	
	4) Low land without irrigation facility	1: Rice	NA	NA	

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 8 weeks (August 1st Week)	1) **Farming situation:** Upland with high rainfall Red alluvial soil	Rice based	NA	NA	
	2) Terrace/medium land without irrigation 3) Low land without irrigation facility Sandy loam	Rice	NA	NA	
		1 : Rice	NA	NA	
		2 : Rice based	NA	NA	
	4) low land without irrigation facility Clayey soil				
		Rice based	NA	NA	
	5) Low land with irrigation facility				
		Rice	NA	NA	
	1) **Farming situation:** Upland with high rainfall Red alluvial soil				
		Rice based	NA	NA	

***Matrix for specifying condition of early season drought due to delayed onset of monsoon (2, 4, 6 & 8 weeks) compared to normal onset (2.1.1)**

Normal onset (Month and week)	Month and week for specifying condition of early season drought due to delayed onset of monsoon			
	Delay in onset of monsoon by			
	2 wks	4 wks	6 wks	8 wks
June 1st wk	June 3rd wk	July 1st wk	July 3rd wk	Aug 1st wk
June 2nd wk	June 4th wk	July 2nd wk	July 4th wk	Aug 2nd wk
June 3rd wk	July 1st wk	July 3rd wk	Aug 1st wk	Aug 3rd wk
June 4th wk	July 2nd wk	July 4th wk	Aug 2nd wk	Aug 4th wk
July 1st wk	July 3rd wk	Aug 1st wk	Aug 3rd wk	Sep 1st wk
July 2nd wk	July 4th wk	Aug 2nd wk	Aug 4th wk	Sep 2nd wk

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) **Farming situation:** Rainfed/ upland	1: Rice (local variety – Buh pui)	1. Weeding 2. Plant protection measures 3. Gap filling	1. Application of recommended dose of NPK. 60:60:40	
		2 : Bird's eye chilli	1. Weeding 2. Plant protection measures 3. Gap filling	1. Application of recommended dose of NPK 60:60:40	

				2. Log wood bunding	
		3 : Ginger (local variety - Thingpui)	1. Weeding 2. Plant protection measures 3. Earthing up	1. Intercropping or Mix cropping. 2. Application of recommended dose of NPK 80:60:60	
	2) Terrace/medium land with red alluvial soil, rainfed	1 : Rice (local variety – Biruchuk)	1. Seed placement or gap filling 2. Plant protection measures 3. Weeding	1. Log wood bunding. 2. intercropping 3. Application of recommended dose of NPK 60:60:40	
		2 : Maize (local variety – mimpui, mim ban)	1. Gap filling 2. Plant protection measures i.e. post-emergence weedicides and insecticides 3. Weeding	1. Bunding 2. Application of recommended dose of NPK. 80:80:60	
	3) Low land with irrigation facility, Sandy loam soil	1. Rice (Biruchuk –local)	1. Gap filling 2. Weeding 3. Irrigation	1. Application of recommended dose of NPK 80:60:40 2. Minimum Tillage	

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**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on Implementation**
At vegetative stage	1) **Farming situation**: Rainfed / upload	1. Rice	1. Application of plant protection measures 2. Weeding	1. Application of recommended dose of NPK.	
		2. Ginger	1. Weeding 2. Thinning of the plant population 3. Need based plant protection measures	1. Intercropping or Mix cropping. 2. Application of recommended dose of NPK	
		3. Bird's eye chilli	1. Weeding 2. Thinning of the plant population 3. Need based plant protection measures	1. Application of recommended dose of NPK 2. Log wood bunding	

	2) Terrace etc.	1. Rice	1. Weeding 2. Need based plant protection measures 3. Dripping and wetting method	1. Application of recommended dose of NPK.	
		2. Maize	1. Weeding 2. Need based plant protection measures 3. Dripping and wetting method	1. Application of recommended dose of NPK 2. Mulching with straw 3. Irrigation	
Condition			**Suggested Contingency measures**		
Mid season drought (long dry spell)	**Major Farming situation[a]**	**Normal Crop/cropping system**	**Crop management**	**Soil nutrient & moisture conservation measures**	**Remarks on Implementation**
At flowering/ fruiting stage	1. Jhum/upland with no irrigation facility	1. Rice	1. Application of plant protection measures 2. Weeding	1. Log Wood bunding. 2. Zero tillage. 3. Mix Cropping 4. Application of recommended dose of NPK	
		2. Chilli	1. Weeding 2. Thinning of the plant population 3. Need based plant protection measures	1. Log Wood Bunding. 2. Application of recommended dose of NPK	
		3. Ginger	1. Weeding 2. Intercropping. 3. Need based plant protection measures	1. Application of Recommended dose of NPK. 2. Mix Cropping	
	2. Terrace/medium land	1. Rice	1. Application of plant protection measures 2. Weeding	1. Application of recommended doses of NPK. 2. Proper tillage.	
		2. Chilli	1. Weeding 2. Thinning of the plant population 3. Need based plant protection measures	1. Application of recommended dose of NPK. 2. Mix Cropping.	

			4. Intercropping		
		3. Ginger	1. Weeding 2. Intercropping. 3. Need based plant protection measures	1. Application of Recommended dose of NPK. 2. Mix Cropping	

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]**
	Rainfed Upland	Rice	1. Application of plant protection measures 2. Weeding	Cole Crops	
		Maize (Sole)	Damage Crop may be use as fodder crops	Field Pea, Cole Crops, tomato	

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 canals due to low rainfall	Medium low land	Rice	Short duration crop e.g. : IR-64	Weeding, life saving irrigation	
		Maize-mustard	Intercropping	Weeding, life saving irrigation Earthing up for maize, Mulching	
		Cowpea and French Bean	Sole Crop	Weeding, life saving irrigation	
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	1) Medium Low land	Maize-mustard	Intercropping	Weeding, life saving irrigation Earthing up for maize, Mulching	
		Maize (Sole)			
		Radish, lady's Finger, Tomato, Cole Crops			

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	-	-	-	-	-
		-	-	-	-
		-	-	-	-
	-	-	-	-	-
		-	-	-	-
		-	-	-	-

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	-	-	-	-	-
		-	-	-	-
		-	-	-	-
	-	-	-	-	-
Insufficiency of surface water for irrigation	-	-	-	-	-

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	-	-	-	-	-
		-	-	-	-
		-	-	-	-
	-	-	-	-	-
		-	-	-	-
		-	-	-	-
Any other condition (specify)		-	-	-	-

2.2 Unusual rains (untimely, unseasonal etc) (for both rainfed 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]**
Paddy	Provide drainage	Provide drainage	Drain out excess water Harvesting at physiological maturity stage	Shift to safer place & dry shed, safe storage against storage pest& diseases
Maize - beans				
Soyabean- Sesamum				
Cowpea				
Rice bean				
Horticulture				
French bean, tomato, cabbage, cauliflower	Ridge making			
Heavy rainfall with high speed winds in a short span[2]				
Paddy + soybean	Need based plant protection measures	Need based plant protection IPDM method	Safe storage against	Safe storage against storage pest and diseases
Horticulture				
Banana	Irrigation at regular interval.	-	Propping of the plant using bamboo. Harvesting at green stage so as to get better profit	Store it in a dry place for ripening.
Outbreak of pests and diseases due to unseasonal rains				
Rice	1. Drain the excess water as early as possible. 2. Proper weed control should be	1. Drain the excess water as early as possible. 2. Proper weed control should be	Drain the excess water as early as possible	Thresh after drying the sheathes properly

	taken. Take up 3.suitable plant protection measures against pest & disease outbreaks • **Leaf folder:** Spray Chlorpyriphos@2.5ml or Acephate 1.5g or Cartaphydrochloride 2.0g / l or apply 8.0kg Cartaphydrochloride granuals per acre. • **Sheath blight:** Apply recommended nitrogen in 3-4 splits. Spray Propiconazole 1.0 ml or Hexaconazole 2.0 ml or validamycin 2.0 ml /l at 15 days interval based on need. Blast : Remove weeds on the bunds Spray Tricyclozole 0.6/ml or Edifenphos 1.0 ml **Bacterial leaf blight:** Avoid application of excess Nitrogen	taken. **Rodents: F**umigate the burrow with luminium phosphide 2 pellets of 0.6 g per burrow. Poison bait with bromadiolone • **False smut:** Spray Carbendazim 1.0g or COC 2.5g at weekly interval • **Sheath blight:** Apply recommended nitrogen in 3-4 splits. Spray Propiconazole 1.0 ml or Hexaconazole 2.0 ml or validamicin 2.0 ml /lt at 15 days interval • **Blast** : remove weeds on the bunds Spray Tricyclozole 0.6ml or Edifenphos 1.0 ml • **Bacterial leaf blight:** Nitrogen management	• Take up suitable plant protection measures against grain fest and disceases • **Cut worm:** Spray Chlorpyriphos 2.5 ml or DDVP 1.0 ml • **Rodents** :Fumigate the burrow with aluminium phosphide 2 pellets of 0.6 g per burrow. Poison bait with bromadiolone	
Maize	Drain the excess water as early as possible Take up timely control measures for Pink stem borer, sheath blight and Turcicum leaf blight	Drain the excess water as early as possible Take up timely control measures for Pink stem borer, sheath blight and Turcicum leaf blight Take up timely control measures for sheath blight and post flowering stalk rots	Allow the crop to dry completely before harvesting	Harvest the cobs after dried up properly. Dry the grain to optimum moisture condition before storing

2.3 Floods

Condition	Suggested contingency measure[o]			
Transient water logging/ partial inundation[1]	**Seedling / nursery stage**	**Vegetative stage**	**Reproductive stage**	**At harvest**
Paddy	Modified Mat nursery	Drain out excess water	Drain out excess water	Harvesting at physiological maturity stage
Continuous submergence for more than 2 days[2]				
Horticulture / Plantation crops				
Sea water intrusion[3]				

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

Extreme event type	Suggested contingency measure[r]			
	Seedling / nursery stage	**Vegetative stage**	**Reproductive stage**	**At harvest**
Heat Wave[p]	**Not Applicable**	**Not Applicable**	**Not Applicable**	**Not Applicable**
Crop1				
Horticulture				
Crop1 (specify)				
Cold Wave[q]				
Crop1				
Horticulture				
Crop1 (specify)				
Frost				
Crop1				
Horticulture				
Crop1 (specify)				
Hailstorm				
Crop1				
Horticulture				
Crop1 (specify)				
Cyclone				
Crop1				

Horticulture				
Crop1 (specify)				
Sand deposition or heavy siltation				
Specify crop/horticulture/plantation				

Contingent strategies for Livestock, Poultry & Fisheries

2.5.1 Livestock

	Suggested contingency measures		
	Before the event[s]	**During the event**	**After the event**
Drought			
Feed & fodder availability	NA	NA	NA
Drinking water	NA	NA	NA
Health & disease management	NA	NA	NA
Floods			
Feed and fodder availability	NA	NA	NA
Drinking water	NA	NA	NA
Health & disease management	NA	NA	NA
Cyclone			
Feed and fodder availability	NA	NA	NA
Drinking water	NA	NA	NA
Health & disease management	NA	NA	NA
Heat wave and cold wave			
Shelter/environment management	NA	NA	NA
Health & disease management	NA	NA	NA
Snowfall	NA	NA	NA
Earthquake	NA	NA	NA
Landslides	NA	NA	NA

2.5.2 Poultry

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

[a] based on forewarning wherever available

2.5.3 Fisheries/ Aquaculture

	Suggested contingency measures		
	Before the event	**During the event**	**After the event**
1) Drought	NA	NA	NA
A. Capture	NA	NA	NA
Marine	NA	NA	NA
Inland	NA	NA	NA

(i) Shallow water depth due to insufficient rains/inflow	NA	NA	NA
(ii) Changes in water quality	NA	NA	NA
(iii) Any other	NA	NA	NA
B. Aquaculture	NA	NA	NA
(i) Shallow water in ponds due to insufficient rains/inflow	NA	NA	NA
(ii) Impact of salt load build up in ponds / change in water quality	NA	NA	NA
(iii) Any other	NA	NA	NA
2) Floods	NA	NA	NA
A. Capture	NA	NA	NA
Marine	NA	NA	NA
Inland	NA	NA	NA
(i) Loss of stock	NA	NA	NA
(ii) Changes in water quality	NA	NA	NA
(iii) Health and diseases	NA	NA	NA
B. Aquaculture	NA	NA	NA
(i) Inundation with flood water	NA	NA	NA
(ii) Water contamination and changes in water quality	NA	NA	NA
(iii) Health and diseases	NA	NA	NA
(iv) Loss of stock and inputs (feed, chemicals etc)	NA	NA	NA
(v) Infrastructure damage (pumps, aerators, huts etc)	NA	NA	NA

(vi) Any other	NA	NA	NA
3. Cyclone / Tsunami	NA	NA	NA
A. Capture	NA	NA	NA
Marine	NA	NA	NA
Inland	NA	NA	NA
B. Aquaculture	NA	NA	NA
(i) Overflow / flooding of ponds	NA	NA	NA
(ii) Changes in water quality (fresh water / brackish water ratio)	NA	NA	NA
(iii) Health and diseases	NA	NA	NA
(iv) Loss of stock and inputs (feed, chemicals etc)	NA	NA	NA
(v) Infrastructure damage (pumps, aerators, shelters/huts etc)	NA	NA	NA
(vi) Any other	NA	NA	NA
4. Heat wave and cold wave	NA	NA	NA
A. Capture	NA	NA	NA
Marine	NA	NA	NA
Inland	NA	NA	NA
B. Aquaculture	NA	NA	NA
(i) Changes in pond environment (water quality)	NA	NA	NA
(ii) Health and Disease management	NA	NA	NA
(iii) Any other	NA	NA	NA