Annex 9

Predictors of the Regional NWP Model (WRF) of Sri Lanka (DOM WRF)

Predictors of the Regional NWP Model (WRF) of Sri Lanka (DOM WRF)

Table: Predictors of the Regional NWP Model (WRF) of Sri Lanka (DOM WRF)

for Short	Range (e	very 12 ho	ours up to	36 hours	ahead) W	eather For	recast Gui	dance for	Precipitat	ion at Col	ombo
	-		_		_	-	-				

	No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		North-Eas	t Monsson											-		
12h	Predictor	Relative Humidity 300hPa	Wind Shear 300-600hPa	Surface Precipitation	Wind Speed 10m	Wind Shear 300-850hPa	Relative Humidity 600hPa	Relative Humidity 400hPa	Wind Speed 500hPa	Wind Shear 200-700hPa	Wind Speed 200hPa	Wind Shear 200-400hPa	Wind Shear 300-500hPa	Wind Speed 700hPa	Wind Shear 300-400hPa	Wind Speed 600hPa
	t-Value	3.20907	2.85976	2.65559	2.49002	2.42869	2.31897	2.12525	2.00962	1.91372	1.85099	1.82524	1.79481	1.50486	1.26869	0.98457
24h	Predictor	Wind Speed 200hPa	Wind Shear 200-700hPa	Wind Speed 700hPa	Wind Shear 300-700hPa	Wind Shear 300-500hPa	Wind Speed 300hPa	Wind Speed 500hPa	Wind Shear 500-700hPa	Wind Shear 200-300hPa	Relative Humidity 850hPa	Wind Shear 300-400hPa	Wind Speed 850hPa	Wind Shear 200-400hPa	Wind Speed 10m	Surface Precipitation
	t-Value	5.57661	4.43685	3.85102	2.20874	1.86416	1.77137	1.58601	1.40279	1.26553	1.16690	0.95858	0.95592	0.86154	0.81994	0.67696
36h	Predictor	Relative Humidity 700hPa	Relative Humidity 400hPa	Relative Humidity 300hPa	Surface Precipitation	Wind Speed 200hPa	Wind Shear 200-600hPa	Wind Speed 850hPa	Wind Shear 200-500hPa	Wind Speed 600hPa	Wind Speed 300hPa	Wind Shear 200-300hPa	Wind Shear 400-500hPa	Wind Shear 300-850hPa	Wind Shear 300-600hPa	Wind Shear 300-500hPa
	t-Value	4.33845	3.07073	2.61802	2.35502	2.27708	2.25616	2.05496	1.84502	1.74834	1.61663	1.49594	1.42338	1.24397	1.19939	1.17409
		1st Inter	Monsoon													
12h	Predictor	Relative Humidity 850hPa	Surface Precipitation	Wind Shear 400-850hPa	Wind Shear 500-600hPa	Wind Shear 200-600hPa	Wind Shear 200-700hPa	Wind Shear 400-700hPa	Wind Shear 500-850hPa	Wind Shear 200-500hPa	Wind Shear 200-400hPa	Wind Speed 900hPa	Wind Shear 400-600hPa	Wind Speed 500hPa	Wind Speed 600hPa	Wind Shear 300-850hPa
	t-Value	2.73937	2.53146	2.49485	2.40442	2.30620	2.21241	1.91834	1.82756	1.79012	1.50891	1.37134	1.34991	1.31259	1.24021	1.14063
24h	Predictor	Relative Humidity 400hPa	Wind Speed 500hPa	Wind Shear 300-850hPa	Wind Speed 300hPa	Relative Humidity 500hPa	Wind Shear 300-700hPa	Relative Humidity 600hPa	Wind Shear 300-400hPa	Relative Humidity 850hPa	Wind Speed 200hPa	Wind Speed 900hPa	Relative Humidity 900hPa	Wind Shear 200-850hPa	Wind Shear 200-300hPa	Wind Speed 700hPa
	t-Value	3.49002	2.88454	2.80776	2.58195	2.50927	2.49472	2.41718	1.71535	1.68737	1.62321	1.57433	1.44246	1.41742	1.38006	1.30573
36h	Predictor	Relative Humidity 850hPa	Relative Humidity 600hPa	Relative Humidity 400hPa	Wind Shear 300-850hPa	Wind Shear 300-600hPa	Wind Shear 500-600hPa	Wind Shear 400-600hPa	Relative Humidity 900hPa	Wind Speed 600hPa	Wind Shear 500-850hPa	Relative Humidity 700hPa	Wind Shear 200-300hPa	Wind Speed 500hPa	Wind Speed 900hPa	Wind Shear 400-850hPa
	t-Value	2.53481	1.48208	1.42534	1.39588	1.28087	1.25796	1.24585	1.13476	1.06484	1.03033	0.98748	0.8725	0.85445	0.84016	0.80880

		South-Wes	st Monsoon													
12h	Predictor	Wind Speed 500hPa	Wind Shear 200-500hPa	Wind Speed 600hPa	Wind Shear 200-600hPa	Wind Shear 200-850hPa	Surface Precipitation	Wind Speed 400hPa	Wind Shear 200-400hPa	Wind Shear 200-300hPa	Wind Speed 300hPa	Wind Speed 200hPa	Wind Shear 200-700hPa	Wind Speed 700hPa	Relative Humidity 900hPa	Wind Speed 850hPa
	t-Value	7.42273	7.40829	5.82377	5.72517	5.46938	4.72929	4.56081	4.54410	4.17090	4.11560	4.04915	3.32594	3.32078	3.11154	2.99759
24h	Predictor	Relative Humidity 500hPa	Wind Shear 300-400hPa	Wind Shear 300-600hPa	Relative Humidity 900hPa	Wind Shear 400-600hPa	Wind Shear 300-500hPa	Wind Shear 500-600hPa	Wind Speed 200hPa	Surface Precipitation	Wind Shear 400-700hPa	Wind Shear 200-600hPa	Relative Humidity 400hPa	Wind Shear 300-700hPa	Wind Shear 300-850hPa	Wind Speed 850hPa
	t-Value	2.67798	2.39740	2.25995	1.93416	1.86646	1.83862	1.57304	1.43811	1.43547	1.38053	1.30730	1.01323	0.88476	0.8336	0.66194
36h	Predictor	Wind Speed 500hPa	Wind Speed 900hPa	Wind Shear 500-850hPa	Wind Shear 300-700hPa	Wind Speed 10m	Relative Humidity 700hPa	Relative Humidity 900hPa	Wind Speed 200hPa	Wind Shear 200-500hPa	Wind Shear 300-600hPa	Relative Humidity 850hPa	Surface Precipitation	Wind Shear 400-700hPa	Relative Humidity 600hPa	Wind Shear 300-400hPa
	t-Value	4.58391	3.81163	2.60014	2.52567	2.38805	2.26712	2.14512	1.91537	1.83750	1.71735	1.70612	1.58965	1.50180	1.37237	1.25689
		2nd Inter	Monsoon													
12h	Predictor	Surface Precipitation	Wind Shear 200-600hPa	Relative Humidity 500hPa	Wind Speed 850hPa	Wind Shear 400-850hPa	Wind Speed 600hPa	Wind Shear 400-700hPa	Wind Shear 200-700hPa	Wind Speed 200hPa	Wind Shear 500-850hPa	Wind Shear 300-600hPa	Wind Shear 300-700hPa	Wind Shear 300-400hPa	Wind Speed 10m	Wind Shear 300-850hPa
	t-Value	4.32409	2.59796	2.29998	2.15706	2.12427	2.02696	1.92018	1.888	1.86339	1.57315	1.50215	1.46011	1.43436	1.42081	1.32863
24h	Predictor	Surface Precipitation	Wind Shear 200-700hPa	Wind Speed 700hPa	Wind Shear 200-850hPa	Wind Speed 900hPa	Wind Shear 400-500hPa	Wind Shear 200-500hPa	Wind Shear 300-500hPa	Wind Speed 500hPa	Wind Speed 400hPa	Relative Humidity 850hPa	Wind Shear 300-600hPa	Wind Speed 10m	Wind Shear 500-850hPa	Wind Shear 400-850hPa
	t-Value	3.84423	3.36431	3.11118	2.70445	2.52404	2.39288	1.84136	1.76944	1.68681	1.68655	1.68417	1.62158	1.51851	1.34873	1.25259
36h	Predictor	Surface Precipitation	Wind Speed 600hPa	Wind Shear 200-850hPa	Wind Shear 200-600hPa	Relative Humidity 900hPa	Wind Speed 700hPa	Wind Shear 300-700hPa	Wind Speed 850hPa	Wind Shear 200-700hPa	Wind Shear 200-500hPa	Wind Shear 300-850hPa	Relative Humidity 500hPa	Wind Speed 400hPa	Relative Humidity 300hPa	Wind Shear 500-600hPa
	t-Value	3.71494	2.88367	2.35809	2.35513	2.29765	2.08585	2.02232	1.94255	1.85079	1.44835	1.34341	1.18458	1.15780	1.14676	1.10928

Table: Predictors of the Regional NWP Model (WRF) of Sri Lanka (DOM WRF)

			for Short I	Range (ev	ery 12 ho	urs up to 3	36 hours a	ahead) We	eather For	ecast Guid	dance for	Precipitati	on at Ratr	napura		
	No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		North-Eas	t Monsson													
12h	Predictor	Wind Speed 400hPa	Wind Speed 300hPa	Wind Speed 500hPa	Wind Shear 200-300hPa	Wind Speed 200hPa	Relative Humidity 500hPa	Wind Shear 200-400hPa	Wind Shear 300-600hPa	Wind Shear 200-600hPa	Wind Shear 400-600hPa	Wind Shear 500-600hPa	Relative Humidity 300hPa	Wind Speed 900hPa	Wind Shear 300-500hPa	Relative Humidity 200hPa
	t-Value	4.28564	3.75972	3.45377	2.98518	2.91977	2.58961	2.33060	2.06554	1.92349	1.79055	1.65127	1.29387	1.11873	1.06205	0.90425
24h	Predictor	Relative Humidity 900hPa	Wind Shear 300-400hPa	Wind Shear 400-600hPa	Wind Shear 300-700hPa	Wind Shear 300-600hPa	Wind Speed 400hPa	Wind Shear 400-700hPa	Wind Shear 200-850hPa	Wind Shear 500-850hPa	Relative Humidity 400hPa	Wind Shear 200-600hPa	Relative Humidity 850hPa	Wind Shear 300-500hPa	Surface Precipitation	Relative Humidity 700hPa
	t-Value	2.40582	1.96380	1.76178	1.66128	1.60832	1.58953	1.57190	1.55981	1.55331	1.48887	1.47792	1.41936	1.32160	1.01272	0.95218
36h	Predictor	Wind Shear 200-850hPa	Wind Speed 200hPa	Wind Speed 600hPa	Wind Speed 850hPa	Wind Speed 500hPa	Wind Shear 200-400hPa	Wind Shear 200-700hPa	Wind Speed 300hPa	Wind Shear 200-300hPa	Relative Humidity 700hPa	Wind Speed 10m	Wind Shear 500-850hPa	Relative Humidity 500hPa	Relative Humidity 300hPa	Wind Speed 900hPa
	t-Value	2.70630	2.51952	2.21881	2.07133	1.74808	1.49325	1.40883	1.33169	1.31425	1.29679	1.29009	1.20839	1.17834	1.00778	0.95578
		1st Inter	Monsoon													
12h	Predictor	Relative Humidity 850hPa	Wind Shear 500-600hPa	Wind Speed 700hPa	Wind Shear 400-700hPa	Wind Shear 300-600hPa	Wind Shear 200-500hPa	Wind Speed 900hPa	Wind Speed 200hPa	Wind Shear 500-850hPa	Relative Humidity 300hPa	Wind Shear 200-400hPa	Wind Shear 400-500hPa	Relative Humidity 200hPa	Wind Speed 850hPa	Wind Shear 400-850hPa
	t-Value	4.04781	3.87165	3.44626	2.43171	2.20297	2.01109	1.97333	1.95333	1.73911	1.52708	1.44646	1.42572	1.28935	1.24756	1.03141
24h	Predictor	Wind Shear 300-850hPa	Wind Shear 300-700hPa	Relative Humidity 400hPa	Wind Shear 400-600hPa	Wind Speed 600hPa	Wind Shear 400-700hPa	Wind Shear 200-500hPa	Wind Shear 200-850hPa	Relative Humidity 300hPa	Wind Speed 300hPa	Wind Shear 500-600hPa	Wind Speed 200hPa	Wind Speed 700hPa	Wind Speed 850hPa	Wind Shear 400-850hPa
	t-Value	4.09985	3.40405	3.08492	2.71677	2.69922	2.68509	2.56688	2.37378	2.34785	2.30042	2.19261	1.91342	1.90656	1.71380	1.30205
36h	Predictor	Wind Speed 500hPa	Wind Speed 600hPa	Wind Shear 300-600hPa	Relative Humidity 200hPa	Wind Shear 200-500hPa	Wind Speed 400hPa	Relative Humidity 850hPa	Wind Shear 300-700hPa	Wind Speed 700hPa	Wind Shear 200-600hPa	Wind Shear 400-850hPa	Wind Speed 900hPa	Wind Speed 850hPa	Relative Humidity 400hPa	Relative Humidity 300hPa
	t-Value	3.27986	3.12445	2.21028	2.18976	2.10308	2.07025	2.00482	1.62813	1.62786	1.60192	1.25836	1.19619	1.19087	1.00565	0.93122

		South-Wes	st Monsoon													
12h	Predictor	Surface Precipitation	Wind Shear 300-500hPa	Wind Shear 300-600hPa	Relative Humidity 700hPa	Relative Humidity 400hPa	Wind Shear 200-400hPa	Wind Speed 400hPa	Wind Shear 300-400hPa	Relative Humidity 300hPa	Wind Shear 200-600hPa	Wind Speed 600hPa	Relative Humidity 600hPa	Wind Shear 400-700hPa	Wind Shear 400-600hPa	Wind Shear 300-850hPa
	t-Value	7.73678	2.76025	2.47284	2.03958	1.92836	1.73620	1.72296	1.70410	1.69675	1.60879	1.37471	1.25578	1.12192	1.00175	0.99416
24h	Predictor	Surface Precipitation	Wind Speed 200hPa	Wind Speed 500hPa	Wind Shear 200-500hPa	Wind Shear 300-850hPa	Wind Shear 400-600hPa	Relative Humidity 700hPa	Wind Shear 200-700hPa	Wind Shear 400-700hPa	Wind Speed 700hPa	Wind Shear 300-700hPa	Wind Shear 400-500hPa	Wind Shear 300-500hPa	Relative Humidity 600hPa	Wind Shear 200-600hPa
	t-Value	4.33034	3.05721	2.84851	2.64797	2.61735	2.58927	2.50114	2.45118	2.13340	1.92484	1.88044	1.78720	1.78682	1.51568	1.20440
36h	Predictor	Surface Precipitation	Wind Speed 700hPa	Wind Shear 200-700hPa	Wind Speed 600hPa	Wind Shear 200-600hPa	Relative Humidity 850hPa	Wind Shear 500-700hPa	Wind Shear 500-600hPa	Wind Shear 400-850hPa	Relative Humidity 200hPa	Relative Humidity 600hPa	Relative Humidity 400hPa	Wind Shear 200-300hPa	Wind Speed 300hPa	Wind Shear 300-600hPa
	t-Value	3.27373	2.11040	1.98315	1.92776	1.86706	1.79973	1.71270	1.65200	1.63653	1.47960	1.40969	1.24987	1.19284	1.19036	1.12073
		2nd Inter	Monsoon													
12h	Predictor	Surface Precipitation	Wind Speed 600hPa	Wind Speed 200hPa	Wind Speed 700hPa	Wind Shear 200-600hPa	Wind Speed 500hPa	Wind Shear 200-400hPa	Wind Speed 10m	Relative Humidity 700hPa	Wind Shear 400-500hPa	Wind Shear 400-600hPa	Wind Speed 850hPa	Relative Humidity 850hPa	Relative Humidity 200hPa	Relative Humidity 600hPa
	t-Value	2.52708	2.31325	2.09474	2.03695	1.84819	1.68397	1.63475	1.59463	1.38242	1.36150	1.23780	1.21187	1.17154	0.96882	0.94688
24h	Predictor	Wind Shear 200-700hPa	Wind Shear 400-600hPa	Wind Shear 200-400hPa	Wind Speed 10m	Wind Shear 300-500hPa	Wind Speed 200hPa	Relative Humidity 300hPa	Wind Speed 700hPa	Wind Shear 300-600hPa	Relative Humidity 700hPa	Relative Humidity 850hPa	Wind Shear 200-850hPa	Wind Shear 400-700hPa	Wind Shear 400-850hPa	Surface Precipitation
	t-Value	2.22519	2.13334	2.13167	2.07162	2.03684	2.02920	1.69099	1.59726	1.59128	1.58631	1.57421	1.49189	1.36247	1.24057	0.93581
36h	Predictor	Wind Shear 500-850hPa	Wind Shear 200-400hPa	Wind Shear 200-600hPa	Wind Speed 200hPa	Wind Shear 200-700hPa	Surface Precipitation	Wind Shear 500-700hPa	Wind Speed 400hPa	Wind Shear 300-600hPa	Relative Humidity 900hPa	Relative Humidity 400hPa	Relative Humidity 300hPa	Wind Speed 900hPa	Wind Speed 600hPa	Wind Shear 300-850hPa
	t-Value	2.91230	2.51390	2.47671	2.32335	2.30164	2.24077	2.16202	1.96796	1.94160	1.90563	1.88546	1.71682	1.44367	1.38872	1.33959

		I	fo	or Short R	ange (24 l	nours and	48 hours	ahead) S	ea Wind V	leather Fo	precast Gu	lidance at	Puttalam			1
	No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		North-Eas	t Monsson			1		T	T	1	1		1	T	T	
24h	Predictor	Wind Shear 500-900hPa	Wind Speed 10m	Relative Humidity 300hPa	Relative Humidity 950hPa	Wind Shear 400-850hPa	Surface Precipitation	Wind Shear 600-950hPa	Wind Shear 200-700hPa	Wind Speed 950hPa	Wind Shear 200-600hPa	Wind Shear 300-500hPa	Wind Shear 700-900hPa	Wind Shear 300-850hPa	Wind Shear 600-700hPa	Wind Shea 300-900hP
	t-Value	4.32696	3.51733	3.40597	3.30256	2.96452	2.83225	2.67836	2.62882	2.6192	2.48579	2.24504	2.10278	1.76051	1.75417	1.36381
48h	Predictor	Wind Shear 500-950hPa	Wind Speed 10m	Wind Shear 850-950hPa	Relative Humidity 300hPa	Relative Humidity 850hPa	Relative Humidity 900hPa	Wind Shear 400-700hPa	Wind Shear 200-700hPa	Wind Shear 850-900hPa	Wind Shear 300-500hPa	Wind Shear 300-400hPa	Wind Shear 200-400hPa	Wind Shear 300-700hPa	Wind Shear 400-500hPa	Wind Shea 600-950hP
	t-Value	4.47213	2.86411	2.80004	2.66456	2.63083	2.15828	2.10712	2.06988	2.05985	1.89091	1.67632	1.61161	1.59676	1.56122	1.50307
		1st Inter	Monsoon													
24h	Predictor	Wind Speed 10m	Wind Speed 850hPa	Wind Shear 200-950hPa	Wind Shear 400-500hPa	Wind Speed 600hPa	Relative Humidity 500hPa	Relative Humidity 900hPa	Wind Shear 300-400hPa	Wind Shear 400-600hPa	Wind Speed 200hPa	Wind Shear 900-950hPa	Wind Shear 200-300hPa	Wind Shear 600-700hPa	Wind Speed 500hPa	Relative Humidity 200hPa
	t-Value	4.61276	3.92463	3.78168	3.69048	3.28964	2.98154	2.92237	2.72032	2.71067	2.49740	2.43467	2.33890	2.21896	2.05499	1.67449
48h	Predictor	Relative Humidity 300hPa	Relative Humidity 950hPa	Wind Speed 400hPa	Wind Speed 10m	Wind Shear 200-900hPa	Wind Shear 200-400hPa	CAPE	Wind Speed 850hPa	Relative Humidity 900hPa	Wind Shear 500-600hPa	Wind Shear 600-850hPa	Relative Humidity 500hPa	Wind Shear 700-850hPa	Wind Shear 600-700hPa	Relative Humidity 600hPa
	t-Value	3.64940	3.14644	2.79350	2.79272	2.54346	2.39559	2.38969	1.99736	1.99669	1.91287	1.76659	1.72582	1.53737	1.48493	1.38677
		South-Wes	t Monsoon		•	•				•	•		•			
24h	Predictor	Wind Speed 10m	Relative Humidity 950hPa	Wind Shear 500-950hPa	Surface Precipitation	Wind Shear 500-900hPa	Wind Shear 400-600hPa	Wind Shear 700-950hPa	Wind Shear 400-700hPa	Wind Shear 600-900hPa	Wind Shear 700-900hPa	Wind Shear 300-900hPa	Wind Shear 600-950hPa	Wind Shear 400-500hPa	Wind Shear 300-700hPa	Relative Humidity 700hPa
	t-Value	6.92860	4.74092	3.66074	3.45274	3.32967	3.07983	3.06617	2.74710	2.70090	2.65328	2.27319	2.20686	1.87111	1.86362	1.61994
48h	Predictor	Wind Speed 10m	Relative Humidity 950hPa	Wind Shear 900-950hPa	Wind Shear 600-700hPa	Wind Shear 850-950hPa	Wind Speed 400hPa	Wind Shear 400-900hPa	Wind Speed 200hPa	Wind Speed 600hPa	Wind Speed 300hPa	Wind Shear 200-300hPa	Relative Humidity 700hPa	Surface Precipitation	Wind Shear 200-600hPa	Relative Humidity 200hPa
	t-Value	6.08375	4.67391	4.51544	4.04547	3.90867	3.59402	3.58081	2.80277	2.58429	2.58306	2.51292	2.45204	2.29834	2.20217	2.09573
		2nd Inter	Monsoon													
24h	Predictor	Wind Speed 950hPa	Relative Humidity 700hPa	Wind Speed 850hPa	Wind Shear 400-950hPa	Wind Shear 400-900hPa	Wind Shear 200-950hPa	Wind Speed 300hPa	Wind Shear 200-900hPa	Wind Shear 500-600hPa	Wind Shear 300-500hPa	Wind Shear 600-950hPa	Wind Shear 600-700hPa	Wind Shear 400-700hPa	Wind Shear 600-900hPa	Wind Spee 10m
	t-Value	5.12804	4.73160	4.52405	3.44656	3.39768	3.20485	3.05569	3.01719	2.87467	2.77107	2.57741	2.43269	2.42267	2.20863	2.15338
48h	Predictor	Relative Humidity 500hPa	Wind Speed 600hPa	Wind Shear 600-700hPa	Wind Speed 500hPa	Wind Shear 500-700hPa	Wind Shear 400-700hPa	Wind Shear 700-900hPa	Wind Shear 900-950hPa	Wind Shear 500-600hPa	Wind Shear 300-700hPa	Wind Shear 300-400hPa	Wind Shear 600-900hPa	Wind Shear 300-600hPa	Wind Shear 850-950hPa	Wind Shea 400-600hP
	t-Value	4.26656	4.17933	3.41109	3.36812	3.31198	3,30008	3.17712	3.14282	2.90831	2.84341	2.69923	2.65216	2.47415	2.43196	2.06396

Table: Predictors	of the Regional	NWP Model	(WRF) of Si	i Lanka (D	OM WRF)
haw Danara (04 hauna	and 10 having a	haad) Caa M/	a al VA/a a Ala a u	Fana and C	Suidenee et F

			f	or Short F	lange (24	hours and	48 hours	ahead) S	ea Wind V	Veather F	orecast G	uidance a	Pothuvil			
	No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		North-Eas	t Monsson													
24h	Predictor	Wind Shear 900-950hPa	Wind Speed 300hPa	Wind Shear 300-600hPa	Wind Shear 700-950hPa	Relative Humidity 600hPa	Surface Precipitation	Wind Shear 600-850hPa	Wind Shear 200-400hPa	Wind Speed 950hPa	Wind Speed 10m	Wind Shear 600-950hPa	Wind Shear 200-300hPa	Wind Shear 400-700hPa	Wind Shear 400-600hPa	Relative Humidity 300hPa
	t-Value	4.76039	3.61746	3.51547	3.22945	2.89756	2.88760	2.88196	2.83623	2.83456	2.72769	2.59442	2.59108	2.43490	2.43488	2.08255
48h	Predictor	Wind Shear 700-950hPa	Wind Shear 400-500hPa	Relative Humidity 950hPa	Wind Shear 300-500hPa	Wind Speed 900hPa	Wind Speed 850hPa	Surface Precipitation	Wind Shear 700-900hPa	Wind Shear 200-950hPa	Wind Shear 200-600hPa	Wind Shear 300-700hPa	Wind Shear 400-700hPa	Wind Shear 850-900hPa	Wind Speed 400hPa	Wind Shear 400-900hPa
	t-Value	3.81455	3.60370	3.19271	3.12679	2.99743	2.75710	2.62951	2.35308	2.22142	2.14364	1.94831	1.90315	1.49346	1.27272	1.25319
		1st Inter	Monsoon													
24h	Predictor	Wind Speed 10m	Wind Speed 850hPa	Wind Speed 200hPa	Wind Shear 500-850hPa	Wind Shear 200-850hPa	Wind Shear 850-950hPa	CAPE	Wind Speed 400hPa	Wind Shear 500-900hPa	Wind Shear 600-900hPa	Wind Shear 600-850hPa	Relative Humidity 950hPa	Wind Shear 200-500hPa	Wind Shear 600-950hPa	Relative Humidity 850hPa
	t-Value	6.34402	5.06844	4.66570	4.63906	3.63966	3.57616	3.50804	3.37803	3.07566	2.77892	2.75897	2.49574	2.46986	2.42266	2.05722
48h	Predictor	Relative Humidity 500hPa	Relative Humidity 900hPa	Relative Humidity 700hPa	Relative Humidity 950hPa	Wind Shear 400-950hPa	CAPE	Wind Shear 700-950hPa	Relative Humidity 850hPa	Wind Shear 200-500hPa	Relative Humidity 300hPa	Wind Shear 850-950hPa	Wind Shear 700-850hPa	Wind Shear 200-900hPa	Wind Speed 850hPa	Wind Shear 300-700hPa
	t-Value	3.33882	3.24290	3.22822	2.99605	2.93986	2.60492	2.59234	2.19385	2.18529	2.02378	1.60667	1.56990	1.53839	1.34602	1.29639
		South-Wes	t Monsoon													
24h	Predictor	Wind Speed 900hPa	Wind Speed 10m	Relative Humidity 850hPa	Wind Shear 400-900hPa	Relative Humidity 900hPa	Wind Speed 950hPa	Wind Speed 600hPa	Wind Speed 700hPa	Wind Shear 400-600hPa	Wind Shear 200-300hPa	Wind Shear 200-600hPa	Wind Shear 400-700hPa	Surface Precipitation	Wind Shear 200-950hPa	Wind Shear 400-950hPa
	t-Value	4.24230	4.10889	3.46690	3.40450	3.38935	3.25905	3.00876	2.63914	2.36240	2.30150	1.85544	1.79381	1.54414	1.44003	1.34154
48h	Predictor	Wind Speed 10m	Wind Shear 200-900hPa	Wind Shear 700-900hPa	CAPE	Wind Shear 200-850hPa	Wind Speed 600hPa	Wind Shear 850-900hPa	Wind Shear 300-850hPa	Relative Humidity 950hPa	Wind Speed 300hPa	Wind Speed 850hPa	Wind Shear 900-950hPa	Wind Shear 600-900hPa	Wind Speed 500hPa	Wind Shear 600-950hPa
	t-Value	5.70847	3.51638	3.48670	3.40468	3.34724	2.99956	2.94102	2.76710	2.65553	2.49453	2.35942	2.19176	1.89360	1.87376	1.72489
		2nd Inter	Monsoon													
24h	Predictor	Wind Speed 950hPa	Wind Speed 900hPa	Wind Shear 600-950hPa	Wind Shear 200-900hPa	Relative Humidity 500hPa	Wind Shear 300-900hPa	Wind Shear 300-950hPa	Wind Shear 200-950hPa	Wind Shear 500-850hPa	Wind Shear 200-700hPa	Wind Shear 400-500hPa	Wind Shear 300-600hPa	Wind Shear 300-850hPa	Wind Shear 500-900hPa	Wind Speed 300hPa
	t-Value	4.26390	3.51548	3.49808	3.12653	2.95584	2.92671	2.72456	2.67042	2.51144	2.47673	2.46180	2.3972	2.15838	2.04634	2.04401
48h	Predictor	Wind Shear 500-950hPa	Wind Speed 500hPa	Wind Shear 200-600hPa	Wind Shear 400-950hPa	Wind Shear 200-950hPa	Wind Shear 400-700hPa	Wind Shear 500-700hPa	Wind Shear 400-600hPa	Wind Shear 300-400hPa	Wind Shear 400-900hPa	Wind Speed 300hPa	Relative Humidity 200hPa	Relative Humidity 300hPa	Relative Humidity 500hPa	Surface Precipitation
	t-Value	5.92501	5.16396	4.409610	4.28403	3.69678	3.65811	3.57643	3.39886	3.34042	3.02987	2.44919	2.09403	2.08396	2.05255	1.97313

No.	1 North-	2	101 110				ther Fored	rast Guida	ince for Pr	recinitation	at Colom	ho			
	North-	-	3	4	5	6	7	8	9	10	11	12	13	14	15
		ast Monsson													
24h Predic	tor Wind Spe 200hPa	ed Wind Shear 200-700hPa	Wind Speed 700hPa	Wind Shear 300-700hPa	Wind Shear 300-500hPa	Wind Speed 300hPa	Wind Speed 500hPa	Wind Shear 500-700hPa	Wind Shear 200-300hPa	Relative Humidity 850hPa	Wind Shear 300-400hPa	Wind Speed 850hPa	Wind Shear 200-400hPa	Wind Speed 10m	Surface Precipitation
t-Valu	ue 5.5766	4.43685	3.85102	2.20874	1.86416	1.77137	1.58601	1.40279	1.26553	1.16690	0.95858	0.95592	0.86154	0.81994	0.67696
	1st In	er Monsoon													
24h Predic	tor Humidit 400hPa	Wind Speed 500hPa	Wind Shear 300-850hPa	Wind Speed 300hPa	Relative Humidity 500hPa	Wind Shear 300-700hPa	Relative Humidity 600hPa	Wind Shear 300-400hPa	Relative Humidity 850hPa	Wind Speed 200hPa	Wind Speed 900hPa	Relative Humidity 900hPa	Wind Shear 200-850hPa	Wind Shear 200-300hPa	Wind Speed 700hPa
t-Val	ue 3.49002	2.88454	2.80776	2.58195	2.50927	2.49472	2.41718	1.71535	1.68737	1.62321	1.57433	1.44246	1.41742	1.38006	1.30573
	South-V	/est Monsoon													
24h Predic	tor Humidit 500hPa	Wind Shear 300-400hPa	Wind Shear 300-600hPa	Relative Humidity 900hPa	Wind Shear 400-600hPa	Wind Shear 300-500hPa	Wind Shear 500-600hPa	Wind Speed 200hPa	Surface Precipitation	Wind Shear 400-700hPa	Wind Shear 200-600hPa	Relative Humidity 400hPa	Wind Shear 300-700hPa	Wind Shear 300-850hPa	Wind Speed 850hPa
t-Valu	ue 2.67798	2.39740	2.25995	1.93416	1.86646	1.83862	1.57304	1.43811	1.43547	1.38053	1.30730	1.01323	0.88476	0.8336	0.66194
	2nd In	er Monsoon													
24h Predic	Surface Precipitat	Wind Shear on 200-700hPa	Wind Speed 700hPa	Wind Shear 200-850hPa	Wind Speed 900hPa	Wind Shear 400-500hPa	Wind Shear 200-500hPa	Wind Shear 300-500hPa	Wind Speed 500hPa	Wind Speed 400hPa	Relative Humidity 850hPa	Wind Shear 300-600hPa	Wind Speed 10m	Wind Shear 500-850hPa	Wind Shear 400-850hPa
t-Valu	ue 3.84423	3.36431	3.11118	2.70445	2.52404	2.39288	1.84136	1.76944	1.68681	1.68655	1.68417	1.62158	1.51851	1.34873	1.25259

Table: Predictors of the GFS (NOAA Global Forecast System) for Weekly (144h-168h ahead) Weather Forecast Guidance for Precipitation at Ratnapura 14 No 10 15 North-East Monsson Relative Relative Relative Relative Wind Shear Wind Shear 300-400hPa 400-600hPa Wind Shear Wind Shear Wind Speed Wind Shear Wind Shear 300-700hPa 300-600hPa 400hPa 400-700hPa 200-850hPa 500-850hPa Wind Shear 200-600hPa Wind Shear 300-500hPa Surface Predictor Humidity Humidity Humidity Humidity 24h recipitatio 900hPa 400hPa 850hPa 700hPa t-Value 2.40582 1.96380 1.76178 1.60832 1.58953 1.57190 1.55981 1.55331 1.47792 1.32160 1.01272 1.66128 1.48887 1.41936 0.95218 1st Inter Monsoon Relative Humidity Relative Wind Shear Wind Shear Wind Shear Wind Speed Wind Shear Wind Shear Wind Shea Wind Speed Wind Shear Wind Speed Wind Speed Wind Speed Wind Shear Humidity Predicto 24h 400-700hPa 200-500hPa 500-600hPa 200hPa 300-850hPa 300-700hPa 400-600hPa 600hPa 200-850hPa 300hPa 700hPa 850hPa 400-850hPa 400hPa 300hPa t-Value 4.09985 3.40405 2.71677 2.69922 2.68509 2.56688 2.37378 2.34785 2.30042 2.19261 1.91342 1.90656 1.71380 1.30205 3.08492 South-West Monsoon Relative Relative Wind Speed Wind Shear Wind Shear Wind Shear Wind Shear Wind Shear Wind Shear Surface Wind Speed Wind Shear Wind Shear Wind Speed Wind Shear Predictor Humidity Humidity 300-700hPa 400-500hPa 300-500hPa 24h recipitation 200hPa 500hPa 200-500hPa 300-850hPa 400-600hPa 200-700hPa 400-700hPa 700hPa 200-600hPa 700hPa 600hPa 4.33034 3.05721 2.84851 2.64797 2.61735 2.58927 2.45118 2.13340 1.92484 1.88044 1.78720 1.78682 1.20440 t-Value 2.50114 1.51568 2nd Inter Monsoon Relative Relative Relative Wind Shear Wind Shear Wind Shear Wind Speed Wind Shear Wind Speed Wind Speed Wind Shear Wind Shear Wind Shear Wind Shear Surface Predictor Humidity Humidity Humidity 24h 200-700hPa 400-600hPa 200-400hPa 10m 300-500hPa 200hPa 700hPa 300-600hPa 200-850hPa 400-700hPa 400-850hPa Precipitation 300hPa 700hPa 850hPa

1.69099

1.59726

1.59128

1.58631

1.57421

1.49189

1.36247

1.24057

0.93581

2.07162

2.03684

2.02920

2.13167

t-Value

2.22519

2.13334

Annex 10

Pictures of the Project Activities

Picture of the Activities (Consultant Team)



























Pictures of the Long-Term Expert Activities

























Annex 11

Project Brief Notes

JICA Project Brief Note

The Project for Improving of Meteorological Observation, Weather Forecasting and Dissemination in Democratic Socialist Republic of Sri Lanka

- Minimize Human Losses & Property Damages due to Natural Disasters through the timely provision and effective use of accurate Weather Information -

July 2017



Project Background and the Current Issues encountered

Over 90% of the natural disasters which occurred in Sri Lanka during the last 50 years are mainly weather-related disasters such as floods, droughts, landslides triggered by heavy rainfall, lightning, and strong winds. Between years 2000 and 2010, more than 13.0 million people in Sri Lanka have been affected by these natural disasters. Furthermore, the occurrence of extreme weather-related events and natural hazards are becoming more intense and frequent. There is global concern that climate change mainly due to global warming has a potential to increase the severity of these extreme weather events even further.

The Department of Meteorology (DOM) is the government agency mandated to provide meteorological and climatological services and early

warning information for weather hazards and tsunami in Sri Lanka. Since meteorological hazards are becoming more and more intense and frequent, the role of the DOM has become more important and crucial.

It is necessary that the DOM enhances its capability in meteorological observation and improves the accuracy of its forecasts/warnings as well as its ability to disseminate these forecasts/warnings more promptly to effectively mitigate the damages caused by weather-related natural disasters.

To fulfill the above requirements, the Government of Japan is supporting the disaster management sector in Sri Lanka, particularly after the tragic tsunami event of December 2004.

The grant aid project for the "Improvement of Meteorological Information and Disaster Management Network" is one such example of Japanese cooperation in the area of disaster management with the Government of Sri Lanka. Through the project, 38 automatic weather observation systems were deployed to improve weather observation capacity. The location of the automatic weather observation systems deployed are indicated in the map. Under such circumstances indicated above, the Government of Sri Lanka has requested the Government of Japan to implement a project to enhance the capacity of the DOM to accurately predict extreme weather events which can lead to natural disasters. In response to this request, the project for Improving of Meteorological Observation, Weather Forecasting and Dissemination in Democratic Socialist Republic of Sri Lanka started in September 2014.

The overall objective of the Project is to reduce the devastation which may result from natural disasters and effectively mitigate the adverse effects thereof. This could be achieved by improving the DOM's capabilities in meteorological observation and forecasts/warnings on weather hazards which are extreme manifestations of nature that may lead to immeasurable loss and distress for a large number of people and have also become determining factors for significant setbacks in the national economy.



Sri Lanka has four (4) rain seasons as indicated below. Each season has varying spatiotemporal variations of rainfall. In implementing a meteorological project in Sri Lanka, it is of vital importance to comprehend the characteristics of rainfall in Sri Lanka in detail.



Improvement of the Maintenance and Calibration Capability in the Management of the Meteorological Observation Equipment

Approaches undertaken to resolve the Identified Issues

Step: 1

Preparation of new rules, guidelines and manuals as well as the revision of the existing manuals, for the periodically and properly implementation of observation field maintenance and meteorological instrument maintenance/Calibration

- Revision of the "Cleaning/Inspection Procedure including Cleaning/Inspection Report for Automatic Weather Observation System"
- Revision of the "Preventive Maintenance Record for Automatic Weather Observation System"
- Preparation of the "Trouble Shooting and Inspection Procedure for Automatic Weather Observation System"
- Preparation of the "Spare Parts Replacement Procedure for Recovery of Automatic Weather Observation System"
- Preparation of the "Portable Automatic Weather Station Operation Manual"

Step: 2

Review of the existing guidelines on meteorological observation recording and reporting (observation time, observation procedure and recording/reporting procedure). Revision of the current editions of the existing manuals.

• Revision and elaboration of the existing "Observation Guideline"

Step: 3

Procurement of standard meteorological instruments necessary for the calibration of the meteorological observation instruments and of the spare parts necessary for the maintenance of the Automatic Weather observation Systems (AWS)

- Procurement of standard meteorological instruments and Portable Observation Data Comparison & Maintenance Tool
- Procurement of a Thermometer Inspection Bath and Barometer Calibration Device
- Procurement of AWS Spare Parts

Step: 4

Implementation of the training on the maintenance & calibration of the meteorological observation equipment in accordance with the following manuals prepared under the Project

- Cleaning/Inspection Procedure including Cleaning/Inspection Report for Automatic Weather Observation System
- Preventive Maintenance Record for Automatic Weather Observation System
- Trouble Shooting and Inspection Procedure for Automatic Weather Observation System
- Spare Parts Replacement Procedure for Recovery of Automatic Weather Observation System
- Portable Automatic Weather Station Operation Manual



Identification of points to be revised by using the existing manuals

Cleaning/Maintenance Procedure For Automatic Weather Station

> Electronic Engineering Division Department of Meteorology Sri Lanka 2016

Revised and elaborated manuals



On-the-job training using the revised and elaborated manuals

Approaches undertaken to resolve the Identified Issues

Transition to a different communication system Step: 1

Examination of the IP-VPN network as an alternative to the existing VSAT satellite communication system for AWS observation data

• Confirmation of Reliability (communication failure frequency) and service area of IP-VPN network

Step: 2

Implementation of the connection test and communication line stability test of the alternate IP-VPN network

- Implementation of communication line stability test through the use of temporary IP-VPN network established in cooperation with the telecommunication service provider
- Confirmation of data transmission at the DOM Head office from the data logger connected to the IP-VPN network

Step: 3

Implementation of technology transfer and indirect support for the transition to the new communication system

- Preparation of the Network Diagram of the before and after scenario on the change of the system network which utilized the IP-VPN
- Preparation of the Flowchart for the smooth transition from the current VSAT system to the IP-VPN system



The replaced GTS/MSS (DOM H/O)







Replacement of the existing GTS/MSS Step: 1

Preparation of the required technical specifications in order to procure a new GTS Message Switching System compatible with the binary data format (BUFR) as recommended by the WMO

• Preparation of the technical specifications for the required equipment, transport regulation, engineer(s) dispatch plan and training implementation plan, etc.

Step: 2

Procurement, installation and commissioning of the new GTS Message Switching System and the conduct of an initial operational training

- Facilitate the Tender for the procurement of GTS Message Switching System
- Indirect support for import customs clearance
- Support for the establishment of an IP-VPN network for the terminal installed in Mattala Rajapaksa International Airport
- Installation, commissioning and conduct of an initial operational training

Challenge for Transition from Qualitative Forecast to Quantitative Forecast

Approaches undertaken to resolve the Identified Issues

Step: 1

Technology Transfer through the development of a Short Period Weather Forecast Guidance (Quantitative) by using the Grid Point values of Numerical Weather Prediction (NWP) and the Observation Data generated by the Automatic Weather Observation Systems installed by the Japan's Grant Aid.

- Weather Forecast Guidance (every 12 hours precipitation up to 36 hours ahead and maximum wind speed for 24 hours ahead from the initial time) at Colombo and Ratnapura
- Weekly Weather Forecast Guidance for Precipitation (24 hours precipitation for 7 days ahead from the initial time) at Colombo and Ratnapura
- Weather Forecast Guidance of Sea Wind (every 24 hours up to 48 hours ahead) at Puttalam and Pottuvil
- Production of Regression Equation: NWP Grid Point Value & Observation Data
- Production of Forecast Guidance: NWP Grid Point Value substituted into the Regression Equation
- Method: Model Output Statistics (MOS)



Positive Phase of Indian Ocean Dipole

Step: 3

Development and Operation of Semi-automatic Linux Program for Short Range (Colombo: every 12 and 24 hours precipitation) Weather Forecast Guidance with the WRF Grid Point Value



Production Procedures of Weather Forecast Guidance

Step: 2

The conduct of trainings for the improvement of methods/procedures of Seasonal Precipitation Forecast (Quantitative)

- Understanding the precipitation trend for the last 36 years
- Understanding the sea surface temperature (SST) trend (reanalysis data of Somali, Colombo & Sumatra offing in Indian Ocean, Peru offing in Pacific Ocean and West Africa offing in Atlantic Ocean) for the last 36 years
- Seasonal Forecast Guidance for Monthly Accumulated Precipitation at Colombo for 9 months through the use of the NWP Grid Point values of the sea surface temperature
- Understanding the NWP Grid Point values of the monthly average SST at Somali, Colombo & Sumatra offing in Indian Ocean, Peru offing in Pacific Ocean and West Africa offing in Atlantic Ocean for 9 months
- Understanding the current trend of the Indian Ocean Dipole
- Understanding the current trend of the El Niño
- Production of Regression Equation: NWP Grid Point Value of Reanalysis Data of the SST & Observation Data
- Production of Forecast Guidance: NWP Grid Point Value of the SST substituted into the Regression Equation
- Method: Prefect Prognosis Method (PPM)

Safeguarding People's Lives from Meteorological Disasters

Approaches undertaken to resolve the Identified Issues

Step: 1

Review of the current situation on advisory/warning and criteria and confirmation of their appropriateness by comparison with the disaster records and the related observation data.

- Collection of the weather charts, disaster records and the related observation data for the past 30 years.
- Analysis of the severe weather phenomena which generated natural disasters using the collected data and information.
- Identification of the issues in the advisory/warning and criteria according to the specified areas.

Step: 2

Improvement of the advisory/warning criteria for heavy rainfall, strong wind and lightning and the modification of the design of the relevant signs to conform with the universal design.

- Conduct trainings regarding the correct setting and identification of the advisory/warning criteria
- Facilitate lectures regarding the universal design and conduct trainings aimed at designing comprehensible advisory/warning criteria signages
- Setting the advisory/warning criteria for heavy rainfall, strong wind and lightning at each climatic/geographical zone
- Districts with multiple climatic/geographical zones will be divided into 2 areas (e.g. North/South) with the relevant advisory/warning criteria to be applied area-wise.
- Improvement of the advisory/warning sign (Heavy Rain, Lightning, Strong Wind, Cyclone & Tsunami) in compliance with the universal design and which will be comprehensible for anyone.



New advisory/warning sign complying with universal design

Sues Current issuance of advisory/warning is universally applied all over the country using the same criteria. Usage of the new and improved advisory/ warning and criteria tailored to each climate/geographical zone/area of Sri Lanka.

Step: 3

Enhancement of the advisory/warning criteria through test operation and improvement of the advisory/warning bulletin

- Enhancement of the advisory/warning criteria through test operation.
- Improvement of the advisory/warning bulletin (from TEXT product to VISUAL product).



New visualized advisory/warning bulletin (Sample)

Redesign and Innovation of an Attractive DOM Website

Approaches undertaken to resolve the identified issues

Step:1

Required steps for web site improvement

- Adoption of a "Responsive Web Design" for the appropriate and suitable display of the website on any device of the user - PCs, smart phones or tablets.
- Creation and adoption of a "Design Template" for the easy modification of the website's design, color, contents layout and etc. through the website's administrative page.
- Visualization of lengthy textual information.
- Utilization of easily visible and identifiable figures and tables in the page for weather information and weather warning/advisory.
- Placement of a global menu at the upper part of the web page for quick access to frequently required information
- Preparation and placement of graphical city forecasts, identified user's need displayed first, at the upper part of the web page.
- Enhancement of meteorological educational information pages
- Multilingual localized website (Sinhala, Tamil, and English)
- Introduction of analytics tools to track web access through the identification of the user's access number, duration of access, time of access, region, OS, browser and device used to access the website.



Step:2

Required steps for website redesign and innovation

- Establishment of a trial site to ensure smooth implementation.
- Adaptation and incorporation of opinions and requirements collected into the website.
- Server redundancy to avoid site slow down due to visitor traffic caused by too many video download requests.
- Production of new attractive contents optimized for smart phones or tablets.
- Importing each content to a renewed design template.
- Implementation of the transfer from the existing website to the new website designed and developed by Joomla 3.4, Contents Management System.



Step:3

User friendly website

• Establishment of the required environment for the free download of the animated cartoon promoting meteorological disaster risk education

(entitled "Save Yourself: Climate of Sri Lanka, Thunderstorm and Lightning, Heavy Rain and Disaster) from the website to the user's device -PC, smartphone or tablet.



Step:4

Sustainability improvement

 Implementation of the required technical transfer of skills on website redesign and content or layout update through practice and training.

Animated Cartoons for Natural Disaster Awareness and Open Class

Approaches undertaken to resolve the Identified Issues

Production of Animated Cartoons for natural disaster awareness

Step: 1

Production of animated cartoons (with sound and voice) about the frequent natural disasters experienced in Sri Lanka and the safety measures that need to be taken to overcome them

- Title: Save Yourself
- Episodes:

Climate of Sri Lanka Thunderstorm and Lightning Heavy Rain and Disaster

- Languages:
 - English, Sinhala, Tamil
- Design of characters for the animated cartoon (including DOM mascot)
- Making of scripts for each episode
- Translation of the English scripts into Sinhara and Tamil
- Voice recording of the animated cartoon using DOM staff's voice

Production of laminated Beaufort Scale (for Land & Sea) in English, Sinhala and Tamil

Rubber mascot of the DOM

Step: 2

Implementation of technology transfer on production of disaster-prevention educational materials

Open Class Step: 3



Implementation of the "Open Class" at schools to show the animated cartoons

- Showing the animated cartoons
- Evaluation of the students' understanding by conducting a pre/post test
- Commentary and question/answer session
- Provision of rubber mascots of the DOM to all the attendees as certificates of attendance to the open class
- Provision of laminated Beaufort Scale



Improvement of the Maintenance and Calibration Capability in the Management of the Meteorological Observation Equipment

by Long-term Expert and Short-term Experts

Approaches undertaken to resolve the Identified Issues

Step: 1

Review on the current situation of meteorological instrument calibration and planning for establishment of traceability of the instruments

• Scheduling of trainings, production of guideline and manual on instrument inspection, and designing a new instrument calibration laboratory

Step: 2

Preparation of the establishment of meteorological instruments

- Organizing a meteorological instrument calibration team
- Training on utilizing new calibration equipment
- Learning of calibration technique the JICA C/P training program and Short-term Expert trainings
- Production of a guideline and manuals for meteorological instrument inspection

Step: 3

Establishment of the traceability of meteorological instrument

- Start of the new instrument calibration work by the DOM staff
- Sustainable cooperation of the meteorological instrument calibration work with the Japan Meteorological Agency





Training on Meteorology Instrument Calibration by the Short-term Expert from Japan Met. Agency (JMA)

Training on Upper-air Observation by the Short-term Expert from JMA

Challenge for Transition from Qualitative to Quantitative Forecast by Long-term Expert and Short-term Experts

Approaches undertaken to resolve the Identified Issues

Step: 1

Review of knowledges and techniques of weather forecasters

- Forecasters need to acquire knowledges on tropical meteorology due to the lack of meteorological classes in universities in Sri Lanka.
- Issue on the combined usage of numerical weather prediction data and latest meteorological satellite data

Lecture on Basic Meteorology by the Long-term Expert



Training on Theoretical Tropical Meteorology by the Short-term Expert from JAMSTEC

Training on Operational Tropical Meteorology by the Short-term Expert from JMA



Learning of basis to operational tropical meteorology

- "Lecture on basic meteorology" by Long-term Expert
- Trainings on "Theoretical tropical meteorology", "Operational tropical meteorology", "Quantitative precipitation estimation: QPE", "Quantitative precipitation forecast: QPF" and "SATAID" by Short-term Experts

Step: 3

Installation of the HimawariCast receiver and start of weather analysis using the Himawari-8 satellite data and the JMA global numerical model



Training on QPE and QPF by the Short-term Expert from JMA



Installation of the HimawariCast Receiver