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Training Hospital staff on Clinical Management of Dengue

NDCU and NIID join hands for this crucial endeavour

Dengue is a major public health issue in Sri Lanka leading to significant morbidity and mortality. It also causes substantial economic loss due to treatment costs and loss of work, resulting in reduced economic productivity. With over 50,000 cases reported each year, keeping the number of complications and deaths due to dengue at a low level is no easy task. It is essential to empower the clinical staff with refresher training, including hands-on training for optimum patient management.

Outcome objectives signified in the national action plan for prevention and control of dengue in Sri Lanka are, to achieve case incidence below 100/100,000 population by the year 2023 and to reduce and maintain Case Fatality Rate (CFR) below 0.1% by the year 2023. Though the country has still not been able to achieve the expected case incidence rates, Sri Lanka has kept the CFR at around 0.1% during the recent past. Updating the knowledge and skills of Hospital staff on dengue management is vital in this regard.

Therefore, National Dengue Control Unit (NDCU) together with the National Institute of Infectious diseases (NIID), formulated a comprehensive training programme for Medical Officers and Nursing Officers from the entire country. It is conducted at the NIID. This would enable the clinicians and nursing staff to augment their skills in dengue patient monitoring,

treatment, referrals and management of critical cases. It would also grant them an insight to dengue surveillance as well as the dengue death review process. Most of these programmes were sponsored by the World Health Organization (WHO).

The programme was tailor-made to fulfil different training requirements identified within the target groups. Key target groups identified are Medical Officers and Nursing Officers of hospitals in high dengue burden districts including private sector hospitals and postgraduate trainees in Medicine and Community Medicine. Trainees from clinical settings are identified based on few selected criterea. These criterea include the number of dengue patients treated in respective hospitals (identified through DenSys real time dengue surveillance system and dengue midnight totals), apex or referrals hospitals in

dengue high burden districts, time lag since last training at respective hospitals and post-graduate training requirements as a future investment strategy.

This programme includes four categories of trainings. They are,

- A five days intensive hands-on training on clinical management for doctors and nursing officers of government hospitals and postgraduate trainees.
- One day training for private sectors doctors and nurses.
- Follow up training on critical dengue cases for postgraduate trainees in Medicine.
- One day training for postgraduate trainees in Community Medicine regarding important aspects of clinical management of dengue and disease surveillance.

The training is conducted under the leadership of Dr. Ananda Wijewickrama (Consultant Physician, NIID).

Dr Ananda Wijewickrama together with Dr Damayanthi Idampitiya, Consultant Physician, NIID, Dr Shanthini Ganeshan, Consultant Paediatrician, Colombo South Teaching Hospital, and Mrs. Geethani Udugamakorala (Chief Nursing Officer, NIID) are the main trainers.

The services of other resource personnel are obtained as required from specialist in fields of Paediatrics, Gynecology & Obstetrics, Hematology, Radiology, Immunology and Public Health.

The NDCU team contributed training on the Disease Surveillance, Dengue Update and a brief public health prospective for dengue control and prevention.

Training areas include: Dengue epidemiology and current trends, basics of dengue management (including fluid management), monitoring of a dengue patient, nursing care of a dengue patients,

Table 1: Capacity building programme at NIID in collaboration with NDCU from June to September – 2022

	Dates of the Training in 2022	Hospitals	Participants	Total Trained
1	June 20-24	BH Panadura, DGH Gampaha, Colombo North Teaching Hospital, BH Avissawella, BH Mulleriyawa	Medical Officers - 10 Nursing officers - 24	34
2	July 04-08	TH Jaffna, BH Beruwala, NIID	Medical Officers - 6 Nursing officers - 22	28
3	August 01-05	All Island	Medical Registrars - 22 Nursing officers - 6	28
4	August 08-12	All Island	Medical Registrars - 22 Nursing officers - 6	28
5	September 5	Durdans Hospital, Nawaloka Hospital, General Practitioners (Nominated by the College of General Practitioners of Sri Lanka [CGPSL])	Medical Officers - 12 Nursing officers - 51	63
6	September 14	Asiri Medical Hospital, Asiri Central Hospital , New Delmon Hospital , Hemas Hospital, Ruhunu Hospital	Medical Officers - 13 Nursing officers - 48	61
7	September 21	Lanka Hospitals, Ninewells Hospital , Medihelp Hospital , Kings Hospital, Winlanka Hospital, Pannipitiya Nursing Centre, General Practitioners (Nominated by the CGPSL)	Medical Officers - 10 Nursing officers - 43	53
8	September 26-30	TH Ratnapura, BH Eheliyagoda, DGH Avissawella, BH Mawanella, DGH Kegalle, NIID, KDU Hospital	Medical Officers - 11 Nursing officers - 28	39

The Table 1 gives the summary in respect to the training programmes conducted between June and September

case based discussion on dengue management, disease surveillance, hands-on training at dengue wards at NIID, special topics on management of dengue in children and pregnant mothers, research and development in dengue prevention and control, interactive sessions and case-based discussion on critical cases.


This intensive training modality would no doubt equip curative sector health teams in monitoring dengue and attending to any surge in dengue cases following a possible outbreak.

We have received a very positive feedbacks from the participants and their respective hospitals. The team effort of NIID and the NDCU has contributed tremendously to the success of the programme. The WHO is greatly appreciated for the support extended.

From June to September 2022, we have successfully completed eight training programmes and a total of 298 were trained in this process (101 Medical Officers and 197 Nursing Officers). Three programmes are planned for October as well.

Regular training is followed up by in-depth discussions on case management to improve competency in handling difficult dengue cases, especially for postgraduate trainees.

Once trained, the trainees function as trainers in their respective institutions, in addition to their role in dengue clinical management.

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2. DISTRIBUTION OF DENGUE PATIENTS – August 2022
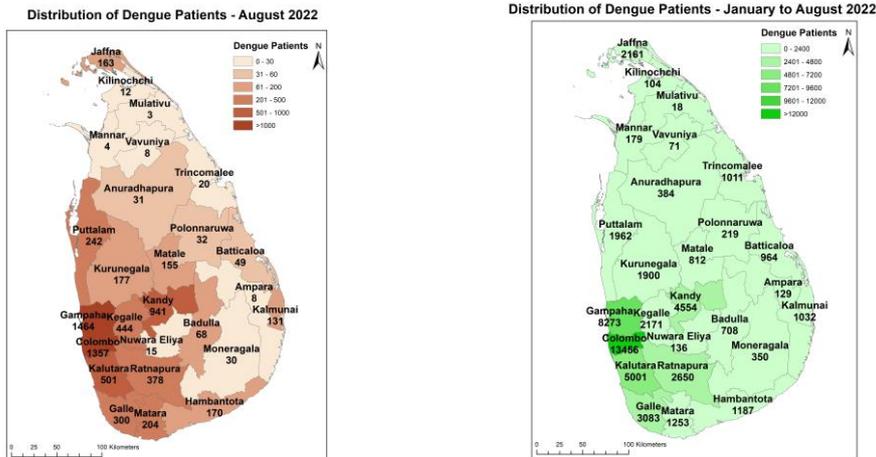
Weekly Dengue case reporting from 2019 upto 1st of September 2022
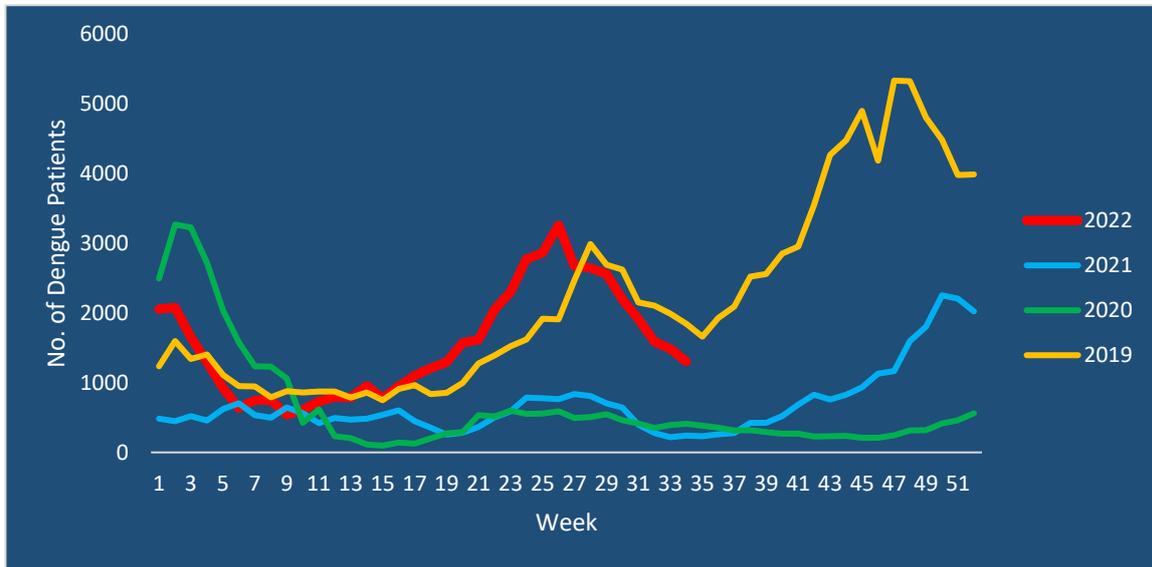
Data source - DenSys

3. SUMMARY OF ENTOMOLOGICAL AND EPIDEMIOLOGICAL SURVEILLANCE DATA – Augst 2022

| SUMMARY OF ADULT VECTOR SURVEYS				
District	**MOH**	**GN area**	**Findings**	
Batticaloa	Eravur	Eravur 02	Indoor findings (8.00 a.m - 1.00 p.m)	*Aedes aegypti* Females 11 (Unfed 01, Blood fed 02, Semi Gravid 03, Gravid 05)
Kalutara	Ingiriya	Ingiriya East	Outdoor findings (8.55 a.m - 5.55 p.m)	*Aedes albopictus* Females 01 (Blood fed)
Colombo	Kolonnawa	Sedawaththa	Outdoor findings (8.00 a.m - 3.00 p.m)	*Aedes albopictus* Females 02 (Semi Gravid)
	Gothatuwa	Halmulla	Indoor findings (8.00 a.m - 3.00 p.m)	*Aedes aegypti* Females 03 (Blood fed)
	Pitakotte	Welsiripura	Indoor findings (8.00 a.m-3.00 p.m)	*Aedes aegypti* Females 01 (Semi Gravid)
	Nugegoda	Obeysekarapura	Indoor findings (8.00 a.m - 2.30 p.m)	*Aedes aegypti* Females 01 (Blood fed)
	Maharagama	Kottawa South	Indoor findings (8.00 a.m - 2.30 p.m)	No *Aedes* species found during the adult survey

Province	District	ENTOMOLOGICAL SURVEILLANCE DATA				Epidemiological surveillance data	
		(Source - returns of entomology surveys received by NDCU)				(Source-DenSys)	
		No. of Premises			Main type of containers positive for larvae and percentage positivity	Month	
		Inspected	Positive Found	Positive %		August	Cumulative
W P	Colombo	1887	139	7.4	Temporary removed items (27.3%), Discarded items (23.7%), Ornamental items (5.7%)	1357	13456
	Colombo MC	609	121	19.95	Discarded items (30.3%), Temporary removed items (16.2%), Other items(15.5%)		
	Gampaha	2282	211	9.2	Discarded items (24.8%), Temporary removed items (14.2%), Natural items (12.6%)	1464	8273
	Kalutara	1372	93	6.8	Discarded items (26.5%), Tyres (12.8%), Other items(12%)	501	5001
	NIHS	1104	139	12.6	Temporary removed items (21.2%), Ornamental items(21.8%), Discarded items (15.9%)		
C P	Kandy	3847	347	9.0	Discarded items (19.2%), Ornamental items(14.6%), Temporary removed items (13.2%)	941	4554
	Matale				Data not Received by NDCU	155	812
	Nuwara Eliya	592	29	4.9	Water storage barrel(29.6%), Discarded items (25.9%), Gutters(11.1%)	15	136
S P	Galle	2000	183	9.2	Discarded items (21.3%), Ornamental items (15.1%), Water storage other items (15.1%)	300	3083
	Hambantota	1427	88	6.2	Ornamental items (22.5%), Discarded items (22.5%), Tyre(13.2%)	170	1187
	Matara	2100	154	7.3	Discarded items (25.7%), Water storage other item (24.3%), Water storage barrel(10.7%)	204	1253
N P	Jaffna	660	9	1.4	Ornamental items (68.4%), Water storage cement tanks (26.3%), Pet feeding (5.3%)	163	2161
	Kilinochchi	500	39	7.8	Discarded items (32.6%), Temporary removed items (25.6%), Wate storage barrel (20.9%)	12	104
	Mannar	1100	20	1.8	Water storage barrel (47.1%), Water storage cement tank (23.5), Pet feeding items (11.8%)	4	179
	Vavuniya	1609	74	4.6	Discarded items (37.1%), Water storage other items (16.9%), Tyres(14.6%)	8	71
	Mullaitivu				Data not Received by NDCU	3	18
E P	Ampara	338	32	8.9	Tyres (44.4%), Discarded items (36.4%), Tyres (29.5%), Water storage other items (20.5%)	8	129
	Batticaloa	1674	39	2.3	Other items (33.3%), Tyres (11.7%), Ornamental items (8.3%)	49	964
	Trincomalee				Data not Received by NDCU	20	1011
	Kalmunai	1166	71	6.1	Ornamental items (18.8%),Temporary removed items (16.5%), Other item (15%)	131	1032
N W P	Kurunegala	1272	139	10.9	Discarded items (22.6%), Temporary removed items (14.4%), Water storage other items (13.5)	177	1900
	Puttalam	900	53	5.9	Discarded items (19%), Water Storage other items (19%), Water storage barrel (12.7%)	242	1962
N C P	Anuradhapura				Data not Received by NDCU	31	384
	Polonnaruwa	712	52	7.3	Discarded items (34.6%), Pet feeding items(15.4%), Tyre (15.4%)	32	219
U P	Badulla	163	34	20.9	Discarded items (28.3%), Water storage other items (28.3%), Water storage cement tanks (17.4%)	68	708
	Monaragala	2016	160	7.9	Discarded items (51.5%), Water Storage barrels (13.8%), Tyres (8.5%)	30	350
S G P	Rathnapura	1801	219		Discarded items (36.5%), Water storage other items (33.3%), Covering items (7.2%)	378	2650
	Kegalle	2987	183	6.1	Discarded items (26.5%), Water storage barrel (19.3%), Ornamental items (11.2%)	444	2171
	Sri Lanka	**35637**	**32912**	**7.6**	**Discarded items (25.5%), Temporary removed items (11.5%), Ornamental items (9.9%)**	**6907**	**53768**

Current High Risk MOH Areas - Epidemiological Trends (Source: DenSys)

Maharagama

Gothatuwa

Ja-Ela

Seeduwa

Panadura

MC Kandy

Kalpitiya

Mawanella

6
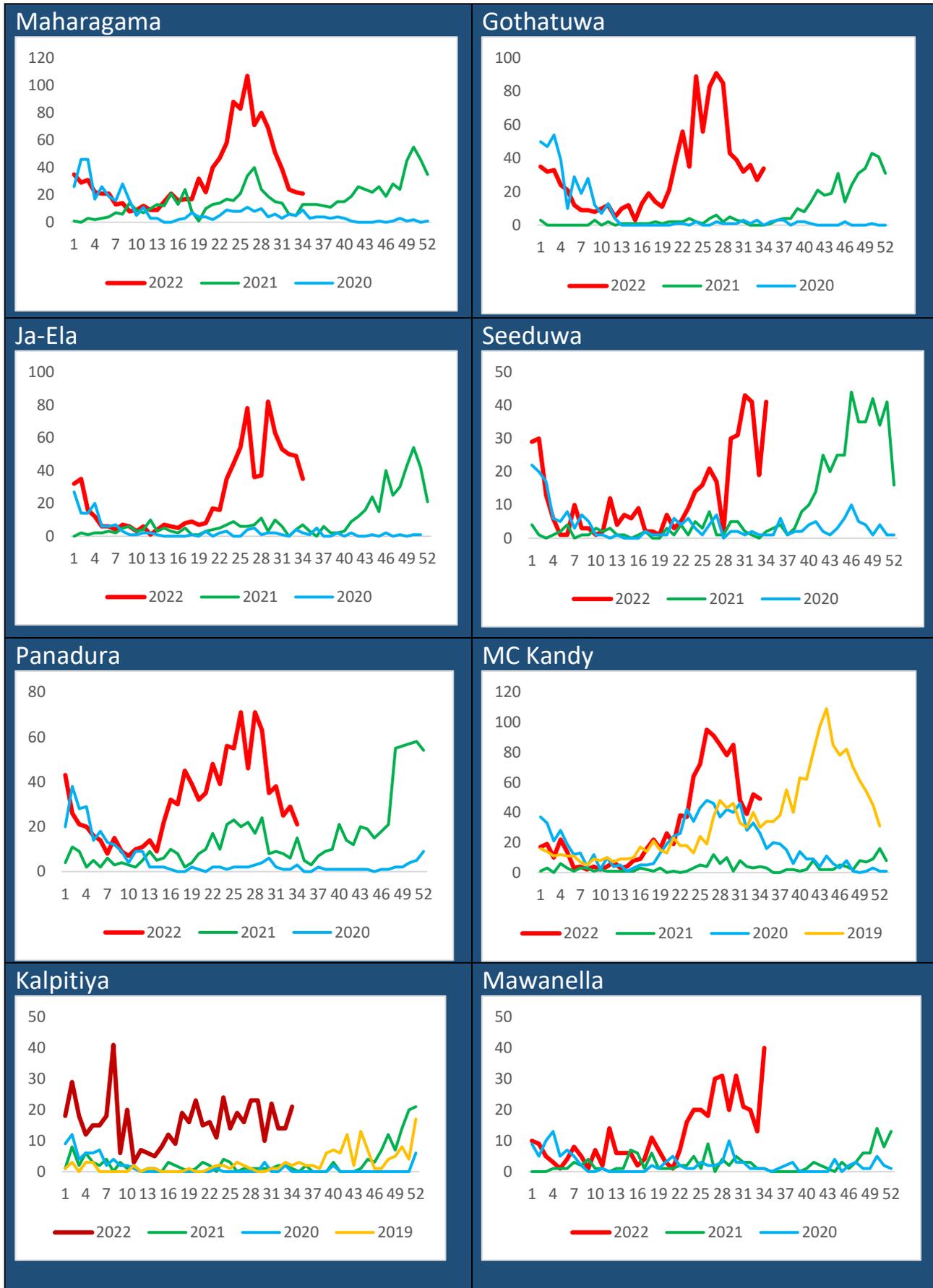
4. High-risk areas based on Entomological forecast

District	MOH Area	GN Division
Colombo	Gothatuwa	Halmulla
	Gothatuwa	Batalandahena
	Dehiwala	Karagampitiya
	Moratuwa	Kuduwamulla
Gampaha	Negombo	Dalupotha II
	Attanagalla	Thihariya
	Divulapitiya	Mallawagedara
Kalutara	Beruwala	757
	Beruwala	753
	Kalutara	730B
	Kalutara	727D
	Dodangoda	799C-Puhabugoda
	Bulathsinghala	Dewamulla
	Bandaragama	Bandaragama
Puttalam	Puttalam	Puttalam East
	Chilaw	Deduru-oya
	Kalpitiya	629
Kandy	Gangawatakorale	Ampitiya
	Kundasale	Kundasale South
	Kundasale	Balagolla
Mannar	Mannar Town	Pallimunai East
Vavniya	Vavniya	Vavniya Town
Rathnapura	Embilipitiya	Pallegama
	Rathnapura PS	Ethoya
Kegalle	Aranayake	Thalagamuwa
	Kegalle	Ranwala
	Weligama	Bandaramulla
Matara	Welipitiya	Denipitiya
Galle	Galle	Dangedara East
	Ambalangoda	Hirewatta
	Hikkaduwa	Dewagoda
Hambantota	Katuwana	Idipokunagoda North
Badulla	Badulla MC	Badulupitiya
Moneragala	Moneragala	Moneragala
Batticaloa	Eravur	Eravur 2A
	Batticaloa	Thiraimadu
	Kaluwanchikudy	75A
	Kattankudy	167A
Kalmunai	Sainthamaruthu	Sainthamaruthu-3,5
	Kalmunai North	Kalmunai-3
	Ninthavur	Ninthavur-4

Dengue vector surveys were conducted in 410GN areas inspecting 35,637 premises in August. Here, the Entomological forecasting has been done by considering the districts currently recording a high number of Dengue cases that are also recorded high values for entomological indices against their conventional threshold values.

5. SPECIAL ACTIVITIES AND EVENTS CONDUCTED BY THE NATIONAL DENGUE CONTROL UNIT

Knowledge Sharing Sessions: 22.08.2022

Training and Hands on Workshop on Clinical Management of Dengue jointly organized by the National Infectious Diseases from 01.08.2022 to 05.08.2022 & from 08.08.2022 to 12.08.2022

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Any comments, suggestions, and contributions for the MDU Sri Lanka are welcome.

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