Naming of Tropical Cyclones over the North Indian Ocean

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1. Historical Background:

The practice of naming storms (tropical cyclones) began years ago in order to help in quick identification of storms in warning messages because names are presumed to be far easier to remember than the numbers and technical terms. Many agree that appending names to storms makes it easier for the media to report on tropical cyclones, heightens interest in warnings and increases community preparedness.

Experience shows that the use of short, distinctive names in written as well as spoken communications is quicker.

In the beginning, storms were named arbitrarily. Then the mid-1900's saw the start of the practice of using feminine names for storms. In the pursuit of a more organized and efficient naming system, meteorologists later decided to identify storms using names from a list arranged alphabetically. Thus, a storm with a name which begins with A, like Anne, would be the first storm to occur in the year. Before the end of 1900's, forecasters started using male names for those forming in the Southern Hemisphere. Since 1953, Atlantic tropical storms have been named from lists originated by the National Hurricane Center. They are now maintained and updated by an international committee of the World Meteorological Organization.

It is important to note that tropical cyclones /hurricanes are named neither after any particular person, nor with any preference in alphabetical sequence. The tropical cyclone/hurricane names selected are those that are familiar to the people in each region. Obviously, the main purpose of naming a tropical cyclone/hurricane is basically for people to easily understand and remember the tropical cyclone/hurricane in a region, thus to facilitate tropical cyclone/hurricane disaster risk awareness, preparedness, management and reduction.

2. Importance for naming tropical cyclones:
- It helps to identify each individual tropical cyclone.
- It helps the public to become fully aware of its development.
- Local and international media become focused on the tropical cyclone.
- It does not confuse the public when there is more than one tropical cyclone in the same area.
- The name of the tropical cyclone is well remembered by millions of people as it is an unforgettable event and associated name will be remembered for a long time.
- Warnings reach a much wider audience very rapidly, if a name is associated with it.

There is a strict procedure to determine a list of tropical cyclone names in an ocean basin(s) by the Tropical Cyclone Regional Body responsible for that basin(s) at its annual/biennial meeting. There are five tropical cyclones regional bodies, i.e. ESCAP/WMO Typhoon Committee, WMO/ESCAP Panel on Tropical Cyclones, RA I Tropical Cyclone Committee, RA IV Hurricane Committee and RA V Tropical

Cyclone Committee. The areas of responsibility of different RSMCs are shown in Fig. 1. The Regional Specialised Meteorological Centre (RSMC) – Tropical cyclones are responsible for monitoring and prediction of tropical cyclones over their respective regions. They are also responsible to name the cyclones.
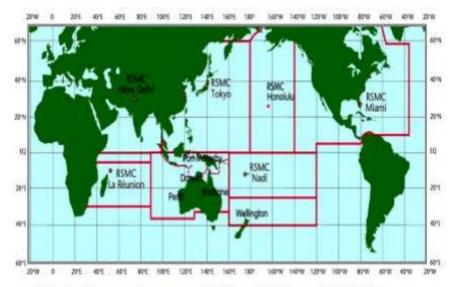

Fig.1 Areas of responsibility of different RSMCs

In general, tropical cyclones are named according to the rules at regional level. For instance, Hurricane Committee determines a pre-designated list of Hurricane names. As an example for north Atlantic Ocean, six lists are used in rotation. Thus, the 2008 list will be used again in 2014. For the eastern north Pacific Ocean the lists are also re-cycled every six years (the 2008 list will be used again in 2014). For central north Pacific Ocean the names are used one after the other. When the bottom of one list is reached, the next name is the top of the next list.

3. Naming of tropical cyclones over north Indian Ocean-the history:

The WMO/ESCAP Panel on Tropical Cyclones at its twenty-seventh Session held in 2000 in Muscat, Sultanate of Oman agreed in principle to assign names to the tropical cyclones in the Bay of Bengal and Arabian Sea. After long deliberations among the member countries, the naming of the tropical cyclones over north Indian Ocean commenced from September 2004.

- The Panel member's names are listed alphabetically country wise.
- The name will be used sequentially column wise.
- The first name will start from the first row of column one and continue sequentially to the last row in column eight. Example, this will be as Onil, Hibaru, Pyarr, Baaz …………. Amphan
- The names which have been already used from the list are highlighted.

The RSMC tropical cyclones, New Delhi gives a tropical cyclone an identification name from the given name list. The identification system covers both the Arabian Sea and the Bay of Bengal. These lists are used sequentially, and they

are not rotated every few years as the Atlantic and Eastern Pacific lists. The existing list of names of tropical cyclones is placed at **Annexure-II.**

4. Preparation of new list in 2019:

During the 45th PTC Session held at Muscat in September, 2018, it was proposed to prepare the new list of names of tropical cyclones considering the fact that the existing list has only 6 unused names out of a total 64 names. The last list was prepared based on the proposed names from 8 countries. In view of the addition of 5 new countries as members of PTC during 2016-18, it was required to prepare the new list including names of all the 13 countries namely Bangladesh, India, Iran, Maldives, Myanmar, Oman, Pakistan, Qatar, Saudi Arabia, Sri Lanka, Thailand, United Arab Emirates and Yemen.

All the member countries provided a list of 13 names each for tropical cyclones over the Bay of Bengal and the Arabian Sea as per the criteria given in **Section A.** The criteria followed for implementation of the list of names after the due approvals by the PTC is given in **Section B**:

A. **Criteria for selection of tropical cyclones names by the PTC member countries:**
   1. The proposed name should be neutral to (a) politics and political figures (b) religious believes, (c) cultures and (d) gender
   2. Name should be chosen in such a way that it does not hurt the sentiments of any group of population over the globe
   3. It should not be very rude and cruel in nature
   4. It should be short, easy to pronounce and should not be offensive to any member
   5. The maximum length of the name will be eight letters
   6. The proposed name should be provided along with its pronunciation, meaning and voice over
   7. The Panel reserves the right to reject any name, if any of the criteria above is not satisfied.
   8. The finalised names may also be reviewed during the course of time of implementation with the approval of PTC in its annual session, in case any reasonable objection is raised by any member
   9. The names of tropical cyclones over the north Indian Ocean will not be repeated, once used it will cease to be used again. The name should be new. It should not be there in the already existing list of any of the RSMCs worldwide including RSMC New Delhi.

B.   Criteria for implementation of the list of names:

1. RSMC New Delhi will be responsible to name tropical cyclones that have formed over the Bay of Bengal and the Arabian Sea when they have been analysed with maximum wind speeds of 34 knots or more, as per section 2.2.2.6.1 of GDPFS Manual, 2017 edition (WMO No. 485).
2. The name of a tropical cyclone from south China Sea which crosses Thailand and emerge into the Bay of Bengal as a Tropical cyclone will not be changed.
3. The names of tropical cyclones will not be repeated
4. Panel Members names will be listed alphabetically country wise
5. The names will be used sequentially column-wise
6. The first name will start from the first row of column one and will continue sequentially to the last row in the column thirteen

All the member countries submitted a list of 13 names each. The new list of names is placed at **Annexure-I**.

Annexure-I
New list of tropical cyclone names adopted by WMO/ESCAP Panel Member Countries in April 2020 for naming of tropical cyclones over North Indian Ocean including Bay of Bengal and Arabian Sea
(To be used after the name 'Amphan' from the previous list is utilised)

WMO/ESCAP Panel Member countries	Column 1		Column 2		Column 3		Column 4	
	Name	Pron'	Name	Pron'	Name	Pron'	Name	Pron'
Bangladesh	Nisarga	Nisarga	Biparjoy	Biporjoy	Arnab	Ornab	Upakul	Upokul
India	Gati	Gati	Tej	Tej	Murasu	Murasu	Aag	Aag
Iran	Nivar	Nivar	Hamoon	Hamoon	Akvan	Akvan	Sepand	Sepand
Maldives	Burevi	Burevi	Midhili	Midhili	Kaani	Kaani	Odi	Odi
Myanmar	Tauktae	Tau'Te	Michaung	Migjaum	Ngamann	Ngaman	Kyarthit	Kjathi
Oman	Yaas	Yass	Remal	Re-Mal	Sail	Sail	Naseem	Naseem
Pakistan	Gulab	Gul-Aab	Asna	As-Na	Sahab	Sa-Hab	Afshan	Af-Shan
Qatar	Shaheen	Shaheen	Dana	Dana	Lulu	Lulu	Mouj	Mouj
Saudi Arabia	Jawad	Jowad	Fengal	Feinjal	Ghazeer	Razeer	Asif	Aasif
Sri Lanka	Asani	Asani	Shakhti	Shakhti	Gigum	Gigum	Gagana	Gagana
Thailand	Sitrang	Si-Trang	Montha	Mon-Tha	Thianyot	Thian-Yot	Bulan	Bu-Lan
United Arab Emirates	Mandous	Man-Dous	Senyar	Sen-Yaar	Afoor	Aa-Foor	Nahhaam	Nah-Haam
Yemen	Mocha	Mokha	Ditwah	Ditwah	Diksam	Diksam	Sira	Sira

WMO/ESCAP Panel Member countries	Column 5		Column 6		Column 7		Column 8	
	Name	Pron'	Name	Pron'	Name	Pron'	Name	Pron'
Bangladesh	Barshon	Borshon	Rajani	Rojoni	Nishith	Nishith	Urmi	Urmi
India	Vyom	Vyom	Jhar	Jhor	Probaho	Probaho	Neer	Neer
Iran	Booran	Booran	Anahita	Anahita	Azar	Azar	Pooyan	Pooyan
Maldives	Kenau	Kenau	Endheri	Endheri	Riyau	Riyau	Guruva	Guruva
Myanmar	Sapakyee	Zabagji	Wetwun	We'wum	Mwaihout	Mwei'hau	Kywe	Kjwe
Oman	Muzn	Muzn	Sadeem	Sadeem	Dima	Dima	Manjour	Manjour
Pakistan	Manahil	Ma-Na-Hil	Shujana	Shu-Ja-Na	Parwaz	Par-Waaz	Zannata	Zan Naa Ta
Qatar	Suhail	Es'hail	Sadaf	Sadaf	Reem	Reem	Rayhan	Rayhan
Saudi Arabia	Sidrah	Sadrah	Hareed	Haareed	Faid	Faid	Kaseer	Kusaer
Sri Lanka	Verambha	Ve-Ram-Bha	Garjana	Garjana	Neeba	Neeba	Ninnada	Nin-Na-Da
Thailand	Phutala	Phu-Ta-La	Aiyara	Ai-Ya-Ra	Saming	Sa-Ming	Kraison	Krai-Son
United Arab Emirates	Quffal	Quf-Faal	Daaman	Daa-Man	Deem	Deem	Gargoor	Gar-Goor
Yemen	Bakhur	Bakhoor	Ghwyzi	Ghwayzi	Hawf	Hawf	Balhaf	Balhaf

WMO/ESCAP Panel Member countries	Column 9		Column 10		Column 11		Column 12		Column 13	
	Name	Pron'	Name	Pron'	Name	Pron'	Name	Pron'	Name	Pron'
Bangladesh	Meghala	Meghla	Samiron	Somiron	Pratikul	Protikul	Sarobor	Sorobor	Mahanisha	Mohanisha
India	Prabhanjan	Prabhanjan	Ghurni	Ghurni	Ambud	Ambud	Jaladhi	Jaladhi	Vega	Vega
Iran	Arsham	Arsham	Hengame	Hengame	Savas	Savas	Tahamtan	Tahamtan	Toofan	Toofan
Maldives	Kurangi	Kurangi	Kuredhi	Kuredhi	Horangu	Horangu	Thundi	Thundi	Faana	Faana
Myanmar	Pinku	Pinnku	Yinkaung	Jin Gaun	Linyone	Lin Joun	Kyeekan	Kji Gan	Bautphat	Bau'hpa
Oman	Rukam	Roukaam	Watad	Wa Tad	Al-jarz	Al-Jarouz	Rabab	Ra Bab	Raad	Raad
Pakistan	Sarsar	Sar-Sar	Badban	Baad-Baan	Sarrab	Sarrab	Gulnar	Gul-Nar	Waseq	Waa-Seq
Qatar	Anbar	Anbar	Oud	Oud	Bahar	Bahar	Seef	Seef	Fanar	Fanaar
Saudi Arabia	Nakheel	Nakheel	Haboob	Haboob	Bareq	Bariq	Alreem	Areem	Wabil	Wobil
Sri Lanka	Viduli	Viduli	Ogha	Ogha	Salitha	Salitha	Rivi	Rivi	Rudu	Rudu
Thailand	Matcha	Mat-Cha	Mahingsa	Ma-Hing-Sa	Phraewa	Phrae-Wa	Asuri	A-Su-Ri	Thara	Tha-Ra
United Arab Emirates	Khubb	Khubb	Degl	Degl	Athmad	Ath-Md	Boom	Boom	Saffar	Saf-Faar
Yemen	Brom	Brom	Shuqra	Shuqrah	Fartak	Fartak	Darsah	Darsah	Samhah	Samhah

Note:
1. Panel Members name are listed alphabetically country wise
2. The names will be used sequentially column-wise
3. The first name will start from the first row of column one and continue sequentially to the last row in the column thirteen
4. Table will be used only once

List of tropical cyclone names adopted by WMO/ESCAP Panel Member Countries in September, 2004

(Names which have been utilised till December 2019 are marked in Red)

WMO/ESCAP Panel Member countries	Column one		Column two		Column three		Column four	
	Names	Pron'	Names	Pron'	Names	Pron'	Names	Pron'
Bangladesh	Onil	Onil	Ogni	Og-ni	Nisha	Ni-sha	Giri	Gi-ri
India	Agni	Ag'ni	Akash	Aakaa'sh	Bijli	Bij'li	Jal	Jal
Maldives	Hibaru	--	Gonu	--	Aila	--	Keila	--
Myanmar	Pyarr	Pyarr	Yemyin	Ye-myin	Phyan	Phyan	Thane	Thane
Oman	Baaz	Ba-az	Sidr	Sidr'	Ward	War'd	Murjan	Mur'jaan
Pakistan	Fanoos	Fanoos	Nargis	Nar gis	Laila	Lai la	Nilam	Ni lam
Sri Lanka	Mala	--	Rashmi	Rash'mi	Bandu	--	Viyaru	--
Thailand	Mukda	Muuk-dar	Khai Muk	Ki-muuk	Phet	Pet	Phailin	Pi-lin
WMO/ESCAP Panel Member countries	Column five		Column six		Column seven		Column eight	
	Names	Pron'	Names	Pron'	Names	Pron'	Names	Pron'
Bangladesh	Helen	Helen	Chapala	Cho-po-la	Ockhi	Ok-khi	Fani	Foni
India	Lehar	Le'har	Megh	Me'gh	Sagar	Saa'gar	Vayu	Vaa'yu
Maldives	Madi	--	Roanu	--	Mekunu	--	Hikaa	--
Myanmar	Nanauk	Na-nauk	Kyant	Kyant	Daye	Da-ye	Kyarr	Kyarr
Oman	Hudhud	Hud'hud	Nada	N'nada	Luban	L'luban	Maha	M'maha
Pakistan	Nilofar	Ni lofar	Vardah	Var dah	Titli	Titli	Bulbul	Bul bul
Sri Lanka	Ashobaa	Ashobaa	Maarutha	Maarutha	Gaja	Gaja	Pawan	Pavan
Thailand	Komen	Goh-men	Mora	Moh-rar	*Phethai*	Pay-ti	Amphan	Um-pun