

Nisarga:

The strongest tropical cyclone struck the coconut ecosystem of Maharashtra State

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Severe Cyclonic Storm Nisarga was the strongest tropical cyclone to strike the Indian state of Maharashtra in the month of June since 1891. It was also the first cyclone impact to Mumbai since cyclone phyan of 2009. The third depression and second named cyclone of the annual cyclone season, Nisarga originated as a depression in the Arabian Sea and moved generally northward. On 2nd June, the India Meteorological Department (IMD) upgraded the system to a cyclonic storm, assigning the name Nisarga. On the next day, Nisarga further intensified to a severe cyclonic storm and turned to the northeast, ultimately making landfall approximately 95 km south of Mumbai. Nisarga strongly hited on 3rd June and dissipated on 4th June. Nisarga was the second

cyclone to strike the Indian subcontinent within two weeks time, after Cyclone Amphan, the first super cyclonic storm to have formed in the Bay of Bengal in the 21st century, devastated the state of West Bengal in May 2020. Making landfall in Maharashtra with winds of 110-120 km/h (70 mph), Nisarga became the strongest storm to strike the state in the month of June since 1891. Before Nisarga, only two depressions had struck Maharashtra in 1948 and 1980 respectively.



Impact - In Alibaug, close to where Nisarga made landfall, recorded a wind speed of 102 km/h (63 mph), while nearby Murud-Janjira seen a wind speed of 111 km/h (69 mph) as the Cyclone was strongest at its south southwest section. State Capital Mumbai seen a wind speed of 50-60 km/h. It's remant gave heavy to very heavy rain on the foothills of Eastern Nepal and adjoining Bihar. Nisarga barrelled through Alibaug with 130 km/h. The barrage alisted for two hours before the storm weakened and moved north. By then, around 1,00,000 hours work partially damaged. Countless coconut and areca nuts palms were flattened. The Raigad and some part of Ratnagiri district lost power and phone connectivity. The major roads connecting affected talukas and major national and state highways.

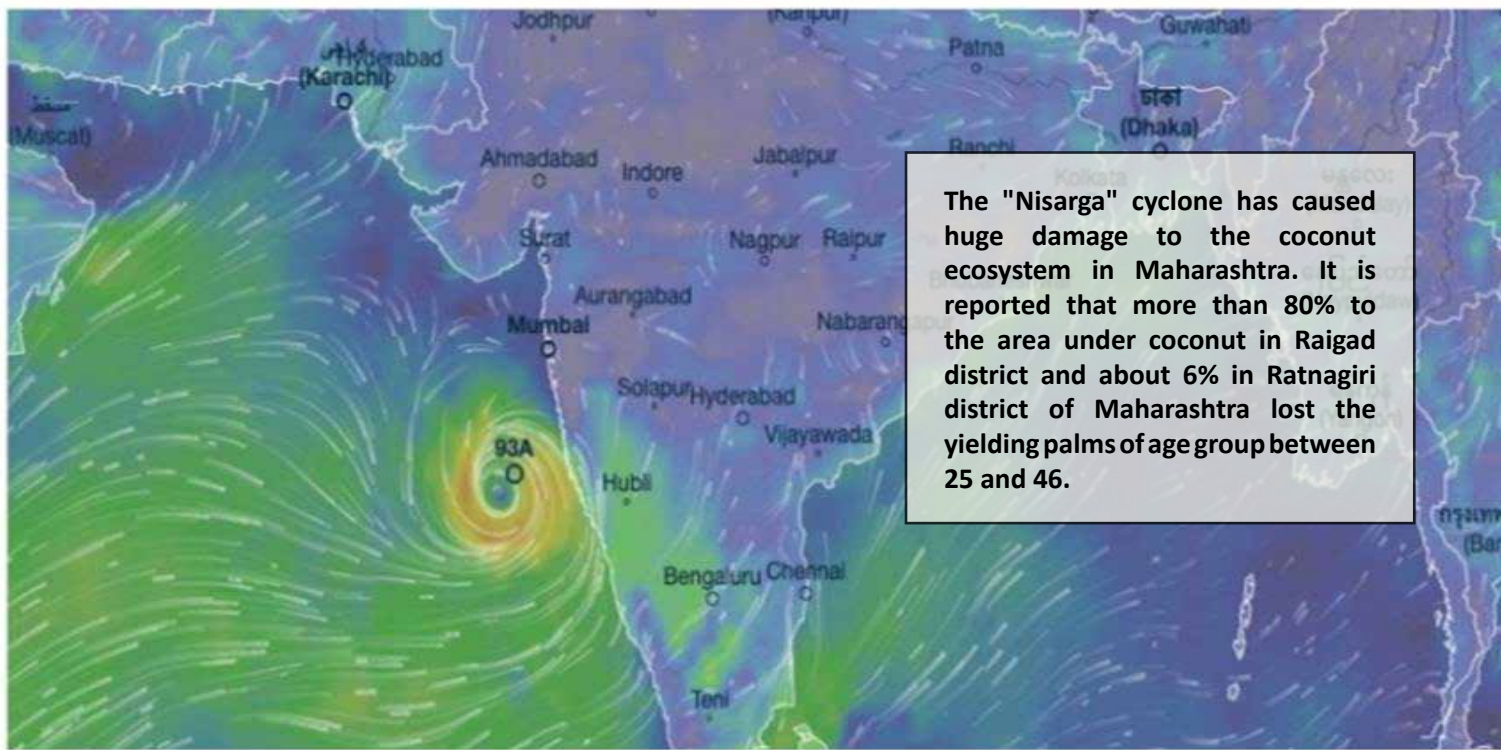
A committee was constituted by Ministry of Agriculture and Farmers Welfare to assess the damage caused by the cyclone. In this regard, a field team was constituted with a representative from each organization consisting State department of Agriculture, State department of Horticulture, State agricultural university (BSKVV, Dapoli), Coconut Development Board, State Centre Thane. Field team visited the severely affected villages in the districts of Ratnagiri and Raigad. The area for sample survey was finalized in consultation with the Department of Horticulture, Maharashtra based on the damage to coconut crop in that area.

The team visited Diveagar village, Shrivardhan

Taluk of Raigad and Murabi village, Dapoli Taluk of Ratnagiri on 23rd and 24th of June 2020, respectively to conduct the sample survey. The team also had discussion with all the committee members through video conference during their field visit which provided an opportunity to view the damage through the live streaming and also to interact with the farmers. The field team enacted as the eye(s) and ear(s) of the committee in undertaking the field visit and their efforts were commendable for the cooperation extended for undertaking the assessment within the time schedule in such a pandemic condition. The field team received the representations from farmers of the sampled area. The farmers represented for electrical/ petrol operated chainsaw for cleaning and requirement for hybrid seedlings. Besides, financial assistance to the tune of Rs. 2.00 lakh per ha is also requested by the farmers.

Loss assessment due to Nisarga cyclone in Maharashtra

The team visit to the farmer's field in Diveagar village, Shrivardhan Taluk of Raigad and Murabi village, Dapoli Taluk of Ratnagiri were conducted on 23rd and 24th of June 2020, respectively to undertake sample survey of damage caused to coconut crop due to Nisarga cyclone. Field team informed that the percentage of crown damage is more in Raigad while the percentage of damage for uprooting is more in Ratnagiri District of Konkan region.





Sample survey undertaken by the field team
Five gardens each in both the districts were visited by the team and the consolidated report is as follows;

Raigad (23.06.20)						
Sr.No.	Name and Address of the Farmer	Area (acre)	Total no. of Palms	No. of palms damaged		
				Uprooted	Crown damaged full	Crown damaged partial
1.	Shri. Manvendra Kamalakant Kulkarni	2.42	688	488	98	102
2.	Shri. Mulidhar Sakaram Shilkar	0.67	374	168	111	95
3.	Shri. Viendra Anant Kulkarni	1.16	148	77	54	17
4.	Shri. Vinayak Narayan Joshi	2.42	142	64	63	15
5.	Shri. Ratnakar Sakharam Shilkar	0.61	49	13	33	3
Total		7.28	1401	810	359	232

Ratnagiri (24.06.20)						
Sr. No.	Name of Farmer	Area (acre)	Total no. of Palms	No. of palms damaged		
				Uprooted	Crown damaged full	Crown damaged partial
1.	Shri. Sharad Ganesh Pendase	0.28	68	54	9	5
2.	Shri. Pramod Laxman Mehandale	0.68	78	67	6	5
3.	Shri. Prakash Bhaskar Paranjape	1.17	218	194	11	13
4.	Shri. Viresh Govind Zagade	2.42	23	18	5	0
5.	Shri. Suresh Laxman Pendase	0.62	68	58	6	4
Total		5.17	455	391	37	27

Sr. No.	Name of Farmer	Area (acre)	Total no. of Palms	No. of palms damaged		
				Uprooted	Crown damaged full	Crown damaged partial
1.	Raigad	7.28	1401	810 (58)	359 (26)	232 (17)
2.	Ratnagiri	5.17	455	391 (86)	37 (8)	27 (6)
Total		12.45	1856	1201 (65)	396 (21)	259 (14)

Figures in parenthesis is percent value



Preliminary damage report				
Sl. No.	District	Total area under coconut (ha)	Affected area (ha)	% area affected
1.	Raigad	3784	3060	80.86
2.	Ratnagiri	5672	313	5.51
	Total	9456	3373	35.67

(Reported by DOH, Maharashtra)

From the report it is to be assumed that 81% of the coconut growing area in Raigad district is affected by the cyclone but in Ratnagiri it is 6 % of the total area.

Field Observations reported by the team

- Great loss to coconut plantation towards west coast of Maharashtra (2720 ha).
- The palms are spaced very closely and intercropped with Arecanut and spices.
- Cutting of uprooted and broken palms is in progress in the area.
- Advice was provided to farmers for necessary care to protect the coconut from Rhinoceros beetle and Red Palm weevil (RPW) infestation due to pile up of uprooted palms.
- Necessary guidance was provided for cleaning and collection of immature fallen nuts and other remaining.

Technical recommendations

- It is important that the plants that were completely uprooted and decapitated have to be removed from the gardens as a means of field sanitation. The fallen trunks and boles of the palms, if allowed to remain in the fields, will serve as breeding sites for the major coconut pest i.e., rhinoceros

beetle and red palm weevil.

- It is important that the slanting/bending bearing palms should not be disturbed;
- Depending on the extent of disturbance of the root system earthing up near the bole region followed by compaction may be done. Young palms below 6 to 8 years age that are bent have to be put back to position and earthing up at the base should be done.
- The twisted spear leaf and its surrounding leaves should be cut six inches below the twist and the fibre wrapping the petioles of these fronds should be longitudinally split so as to release the tension caused due to twisting. The cut bases of these leaves should be thoroughly drenched at the earliest with copper oxychloride 0.3 % (3 g per liter) or Bordeaux mixture @1 % as prophylactic measure to prevent chances of bud rot disease infection. Wherever the farmers are apprehensive about climbing atop the crowns of slanting palms, drenching with fungicide may be done with the help of high pressure power sprayers.

CONCLUSION

The "Nisarga" cyclone has caused huge damage to the coconut ecosystem in Maharashtra. It is reported that more than 80% to the area under coconut in Raigad district and about 6% in Ratnagiri district of Maharashtra lost the yielding palms of the age group between 25 and 46. This is the need of the hour to help the farmer for rejuvenation of the existing gardens with good agriculture practices to improve the growth and yield of palms. ■