

DISASTER PREPAREDNESS IN ODISHA



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Government of Odisha*

Odisha: Disaster profile

- The geo-climatic conditions of Odisha make the entire State vulnerable to different disasters
- The 480 Kms of coastline frequently affected by cyclones
- 11 major river systems creates frequent floods
- About two-third of the total cultivated area being rain-dependent, drought poses a serious threat at regular intervals in the event of failure of Monsoon.
- Some part of the state comes under Earthquake Risk Zone-III (Moderate Damage Risk Zone) covering 44 out of the 106 urban local bodies
- Tsunami is also a potential hazard for the State.

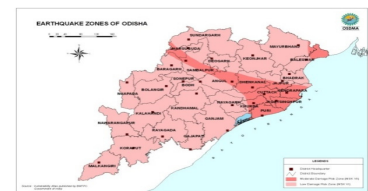
Odisha: Major Disaster History

- The great famine of 1866
- Famine of 1943
- Floods 1955
- Very Severe Cyclone 1971
- Floods 1982
- Super cyclone 1999

Major disasters in the recent past

Year	Calamity
1996	Drought
1997	Drought
1998	Drought, Heat wave
1999	Super Cyclone
2000	Drought
2001	Floods
2002	Drought
2003	Floods
2004	Floods
2005	Floods

2006	Floods
2007	Floods
2008	Floods
2009	Flood & Drought
2010	Flood & Drought
2011	Flood
2013	Cyclone & Flood
2014	Cyclone
2015	Drought
2017	Floods
2018	Cyclone & Flood
2019	Cyclone



During 1996-2018, Odisha has experienced

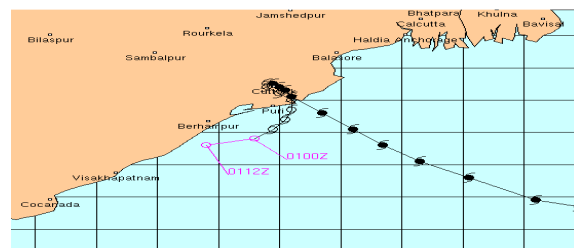
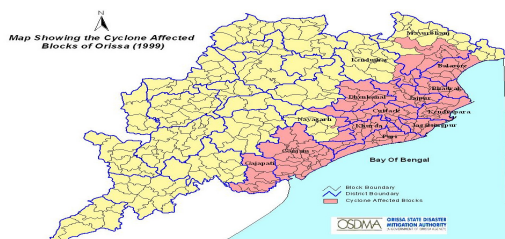
- 13 years of flood,
- 8 years of drought
- 5 years of cyclone

Major Cyclone History of Odisha

31 October, 1831	Very Severe Cyclonic Storm	Crossed Odisha Coast near Balasore Loss of life-50,000
22 September, 1885	Super Cyclone	Crossed Odisha Coast at False Point Loss of life- 5000
8-11 October, 1967	Very Severe Cyclonic Storm	Crossed Odisha Coast between Puri and Paradeep, Loss of life- 1,000
26-30 October, 1971	Very Severe Cyclonic Storm	Crossed Odisha Coast near Paradeep Loss of life- 10,000
15-19 October, 1999	Very Severe Cyclonic Storm	Crossed Odisha Coast at Gopalpur, Ganjam
25-31 October, 1999	Super Cyclone	Crossed Odisha Coast near Paradeep at noon of 29 October, Loss of life- 9885
10-13 October, 2013	Very Severe Cyclonic Storm Phailin	Crossed Odisha Coast at Gopalpur, Ganjam
10-12 October, 2018	Very Severe Cyclonic Storm Titli	Crossed Odisha Coast south of Gopalpur, Ganjam
3-4 may	Extremely Severe Cyclonic Storm Fani	Crossed Odisha Coast near Puri

Super Cyclone 1999

- The Super Cyclone of 1999: the most severe cyclone to have hit Indian Sub-continent ever.
- The highest recorded wind speed was 260 km per hour.
- Cyclonic winds and associated storm surges and flooding caused extensive damage in the coastal areas .
- 14 districts and 1,89,71,072 people affected.
- Nearly 10,000 precious human lives were lost.
- 2 Million houses damaged.
- Transport, Telecom, Power systems damaged.
- 18 lakhs Hectares of Cropped Area damaged.



Learning from the disaster

- Paradigm shift in disaster management
- Institutionalization of DM
- Policy planning framework
- Multi-stakeholder approach
- Community centric disaster preparedness
- Disaster Management Planning at all levels
- Preparedness and mitigation Initiatives
 - Effective early warning
 - Shelters
 - Response forces
 - Capacity building
 - Mock drills
- Mitigation projects

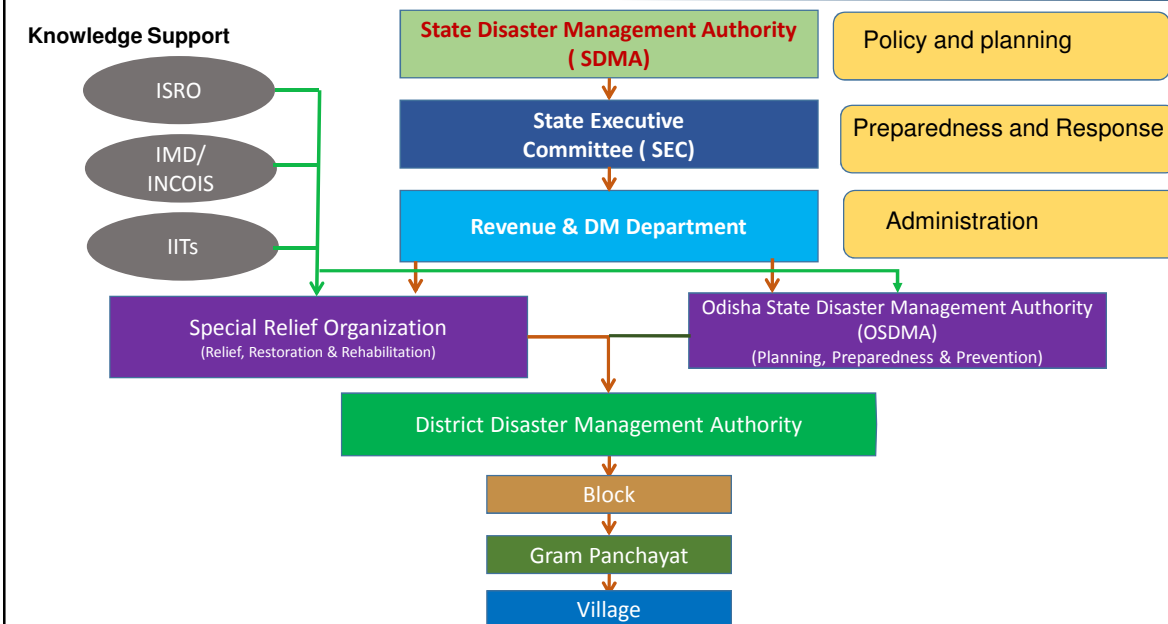
Disaster management approach

- Odisha Disaster Management Authority (OSDMA) set up in December 1999 to look after Disaster Mitigation activities.
- Systemic improvement and capacity enhancement of official machinery and community taken up after super cyclone.
- Disaster Management Planning at all levels.
- Cyclone-proof shelter buildings along the coast constructed.
- Dedicated Odisha Disaster Rapid Action Force (ODRAF)
- Fire Services strengthened and converted to Fire & Disaster Response Force – 335 units across the state

Contd...

- Massive awareness raising activities taken up.
- Community mobilisation taken up in large scale with provision of training on key aspects in more than 23,000 villages.
- Setting up of State Institute of Disaster Management in progress.
- Forecasting and warning dissemination systems improved; Social media used for early warning communication.
- Paradigm shift in approach to disaster management helped overcome recent disasters with minimal casualty and damage.

Institutional Mechanism for DM



Multipurpose cyclone and flood Shelters

Real Institution

- Multi-hazard resistance buildings with pile foundation going up to 40 ft under ground
- Designed by IIT, Kharagpur
- Location decided by Grid Analysis technique
- Generator , drinking water facility
- Separate halls & toilet facilities for men and women
- Ground floor for domestic animals

Virtual Institution

- Managed by community based institution
- 34 types emergency equipment provided
- Task force members for SAR and FA
- Used as community hubs for DM



Equipment in the Shelters

Aluminum ladder



Electrical Siren



Portable Power Saw



Gloves/ Safety Shoes/helmet



Inflatable Tower Light



Life buoy



Hand held Search Light



First Aid box & Stretcher



5 KVA Generator



Life Jacket



Hand held Mega phone

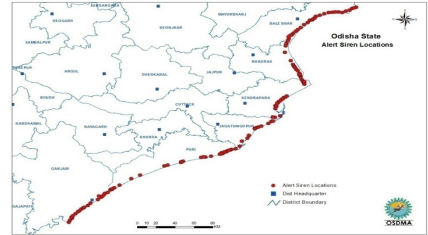


Free Power Radio



Early Warning Dissemination System

- 1205 villages in 22 costal blocks within 5 km from coastline covered.
- Satellite based mobile data voice terminal at SEOC and 6 DEOCs.
- DMR connectivity to SEOC, 6 DEOCs, 22 BEOCs and 22 FLCs.
- Alert Towers at 122 locations within 1.5 km from the coastline for both cyclone & tsunami warning dissemination.
- Mass Messaging from SEOC for cyclone & tsunami waning.
- Universal gateway for inter-operability of communication systems.

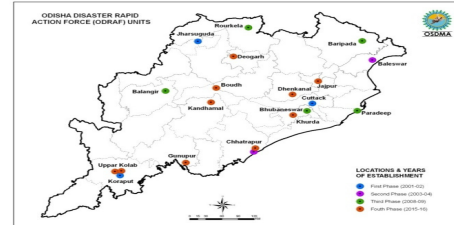


Empowering Community: Capacity building

- DM plans at village, Gram Panchayat, Block, District and State levels
- Village DM Plan prepared and Village DM Committees formed
- Community Based Disaster Preparedness approach
- Taskforce teams constituted at shelter level
- Training of Taskforce teams on shelter management and use of equipment
- Hands on training by ODRAF to community members to use the equipment
- Training of 50 volunteers per shelter within age group of 18-35
 - 25 on Search and Rescue by Civil Defence
 - 25 on First Aid skills through St John Ambulance

Odisha Disaster Rapid Action Force (ODRAF)

- 20 ODRAF units in the state
- Constituted out of the State Police Forces
- Borne in the Police establishment
- About 100 types of emergency equipment provided
- Equipment, maintenance, running cost provided by OSDMA
- Capacity building of personnel taken up by OSDMA
- Deployment lies with Special Relief Commissioner



Disaster resilient housing

- 20,000 disaster resilient houses for the people living in coastal areas constructed in 3 districts.
- People stay safe during cyclones
- Beneficiary driven construction.
- Adequate Road & drain, pipe water supply provided



Geographic Information System (GIS)

- ❑ **An independent GIS Cell has been set up in OSDMA to function as a Decision Support System for effective management of disasters**
 - Development of GIS database for the state for DM
 - Weather Monitoring
 - Air Dropping Operation
 - Vulnerability Mapping
 - Environmental Monitoring for project implementation
 - Project planning and execution
 - Post disaster application like damage assessment

State Drought Monitoring Cell

- State Drought Monitoring Cell functioning in OSDMA
- Monitors situation on different parameters
- Rainfall data recording and analysis
- Enhanced Weather forecasting infrastructure
- Information on Crop & Soil Management
- Promote & support Crop Insurance process
- 6,000 Automatic Rain Gauge stations and 325 Automatic Weather stations are being set up - to cover each Gram Panchayat

Mock Drills

- Mock drills organised on 19th June every year
- Conducted in 30 districts
- Involving community, CSMMC, district administration and other stakeholders
- ODRAF and Fire Service participation
- Tsunami drill ever year in the tsunami prone villages



Policy Planning Framework

- DM Act
- DM Rules
- DM Policy
- Expert Group Reports
- Response protocols
- Shelter management guidelines
- Road map for SFDRR under preparation
- Sustainable Development Goals
- Climate Change Action Plan



Key success of management of cyclone

- Accurate early warning by IMD
- Robust telecommunication system
- Effective early warning communication
- Continuous Govt. public interface through media
- Prepositioning of men, material & equipment
- Massive evacuation of people and livestock
- Adequate preparedness at shelter level
- CBOs and NGOs activated
- Keeping power back up at essential services
- Continuous monitoring



LONGEST-LIVED CYCLONE

FANI FAULTS

Cyclone Fani made a landfall six hours before the last forecast

11

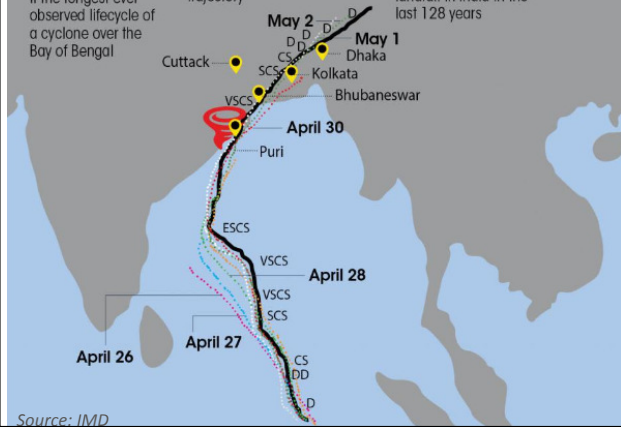
The number of days Fani meandered over the sea, making it the longest ever observed lifecycle of a cyclone over the Bay of Bengal

9*

The number of times forecast had to be revised due to the cyclone's unpredictable trajectory

128 years

Fani is the second severe cyclone which formed in April and made landfall in India in the last 128 years



- **Longest-lived cyclone** in the Bay of Bengal ever observed.
- The elongated time period of the storm went on for **11 days in the sea and land put together**.
- What made it even more surprising was the fact that **it had formed in the pre-monsoon season**, that too in April.

Legend

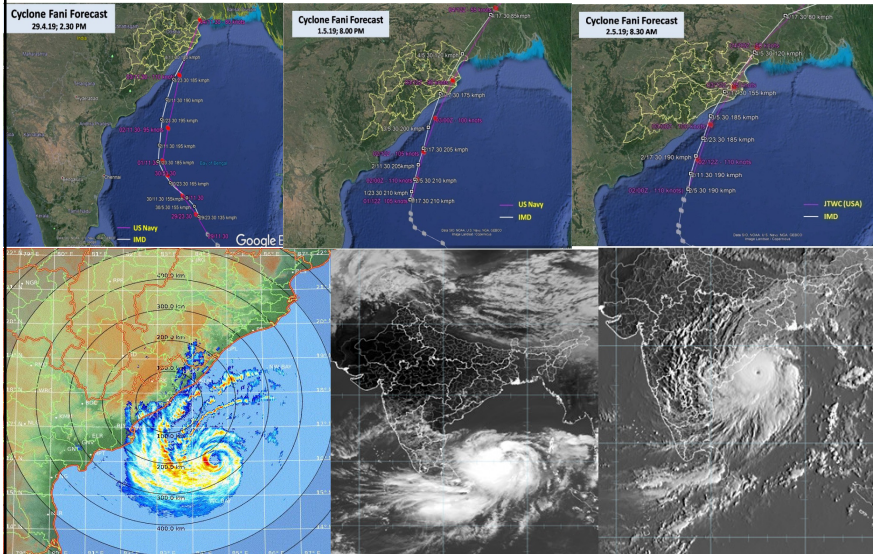
Cyclone classification

D : Depression	SCS : Severe cyclonic storm (89-117 km/hr)
DD : Deep Depression	VSCS : Very severe cyclonic storm (118-165 km/hr)
CS : Cyclonic storm (63-88 km/hr)	ESCS : Extremely severe cyclonic storm (166-220 km/hr)

- Actual path of cyclone Fani
- - - - - Forecast paths between April 26 and May 3

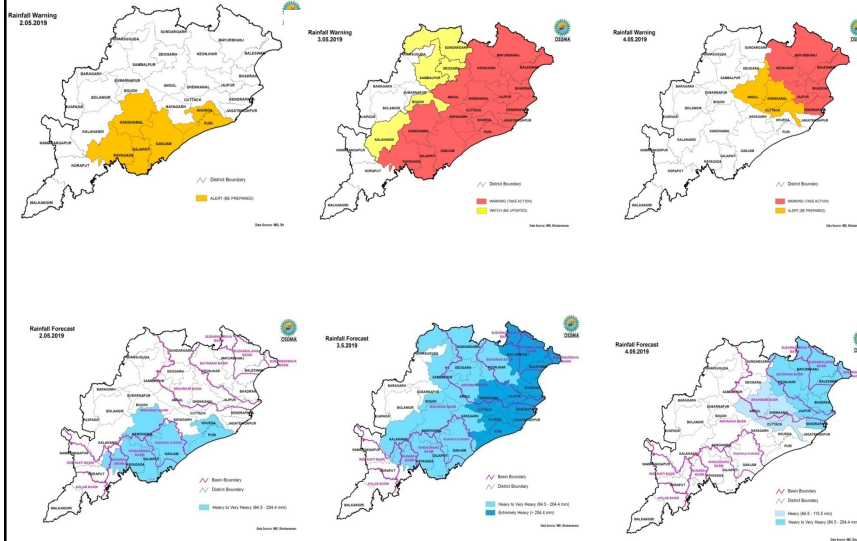
Cyclone Fani hits land on May 3 | *Two forecast advisories were issued on April 29 and May 2 taking the total forecast count to nine

CYCLONE TRACKING



- **GIS based Analysis**
- **Information Used**
 - India Meteorological Department
 - Joint Typhoon Warning Center, USA
 - Regional Integrated Multi Hazard Early Warning System (RIMES), Thailand

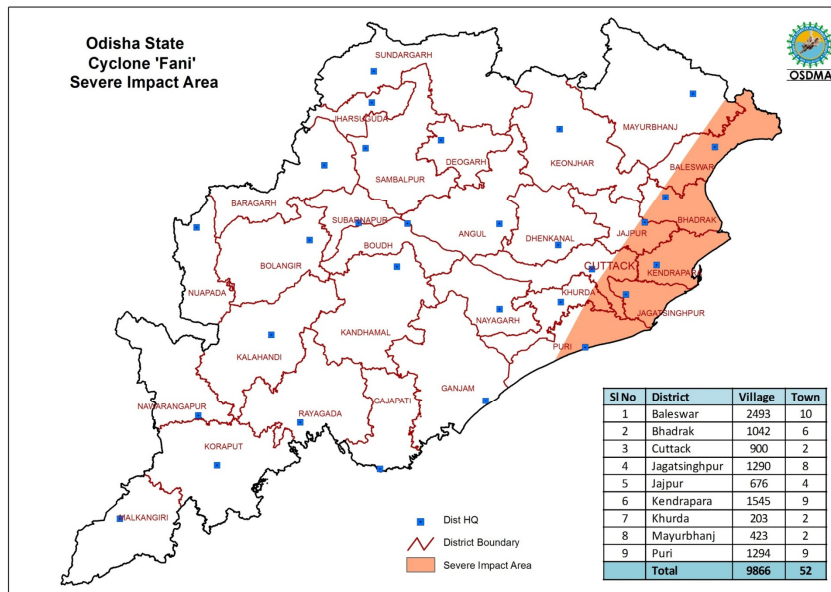
RAINFALL FORECAST



- **Orange-6** districts on 2nd May
- **Red-17** districts **Yellow-5** districts on 3rd May
- **Red-6** districts; **Orange-3** districts on 4th May

Yellow- Be updated
Orange-Be Prepared
Red-Take Action

Severe impact area assessment

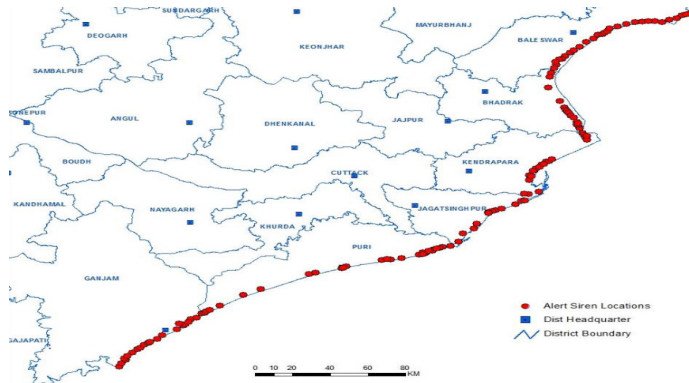


- 10 km buffer area on the landward side
- Entire area of the seaward side.
- 9886 villages
- 52 towns
- 9 districts

24 hours before the *Cyclone Landfall*

The preparations that minimized the casualties & damage

EARLY WARNING ON CYCLONE FANI



- Mobile messages
 - ✓ Location based alert
 - ✓ Group based alert
- Early warning sirens
- Voice messages in Odia language

Early Warning Before Cyclone FANI

No. of SMS	1.8 Cr SMS	No. of TV spots	Over 10
No. of Alerts	274	No. of Satellite Phones	55
No. of DM Radio Alerts	1275	No. of SBMDVT Used	14

EARLY WARNING ON CYCLONE FANI



Early warnings through Megaphone mounted vehicles



Voice Message (5 times) disseminated through EWDS towers

COMMUNITY AWARENESS

Special Relief Commissioner, Odisha
Yesterday at 5:01 PM

BE PREPARED FOR FANI

BEFORE CYCLONE

1. Stay calm, don't panic & Ignore rumours
2. Keep your mobile charged
3. Stay updated on radio & TV
4. Prepare an emergency first aid kit
5. Keep important documents in waterproof containers
6. Secure your house
7. Don't leave any sharp objects loose
8. Unite animals to ensure their safety

AFTER CYCLONE

1. Do not enter damaged buildings
2. Watch out for broken electrical poles, wires and other sharp objects
3. Seek a safe shelter as soon as possible

FISHERMEN

1. Keep a radio at with extra batteries handy
2. Keep boats/rafts tied up in a safe place
3. Do not venture out in the sea

DURING CYCLONE

1. Switch Off electrical mains, gas supplies
2. Keep doors & window shut
3. If your house is unsafe, leave early before the onset of the cyclone
4. Listen to Radio/transistor
5. Drink boiled/chlorinated water
6. Rely only on official warnings

#Fighting #FANI

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1800 345 0061 (toll free)
Bhubaneswar 24x7 Helpline Number
0674 2431253 land line

- Preparedness videos, safety tips broadcasted on TV channels
- Safety & preparedness voice messages broadcasted on radios
- Aapda Mitra volunteers, MCS/MFS Task Force team members for public preparedness, warning dissemination and expediting evacuation
- Social media for real time updates to masses

ପ୍ରସ୍ତୁତି କି ପୁରୁଷା

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COMMUNITY AWARENESS

#Fighting FANI

KNOW THE CYCLONE FANI

- ▶ FANI approaching Odisha from south-east side
- ▶ Predicted landfall on 3rd May at Puri
- ▶ Expected wind speed >150km/h
- ▶ Heavy to very heavy rainfall on 3rd & 4th May
- ▶ Railways & Airports on high alert

Helpline (Bhubaneswar)
1800 345 0061 / 0674 2431253

#HelpFellowBBSRite #BeAlert

1 replies, 6 retweets, 14 likes

#Fighting FANI

STAY INFORMED

- ▶ Special precautions by Government
- ▶ New additional charge for 12 IAS officers
- ▶ 130 temporary cyclone shelters being prepared in Bhubaneswar
- ▶ Refer to official information only (India Meteorological Department & All India Radio)
- ▶ Stay away from hoardings, poles etc. They may be disastrous @100km/h winds.
- ▶ Kutcha houses are prone to severe damage
- ▶ Know your locality, high elevation areas
- ▶ Keep emergency contacts handy

Helpline (Bhubaneswar)
1800 345 0061 / 0674 2431253

#HelpFellowBBSRite #BeAlert

1 replies, 23 retweets, 29 likes

#Fighting FANI

BE PREPARED

- ▶ Keep information about your neighbours
- ▶ Know your transportation options
- ▶ Know your nearest cyclone shelters
- ▶ Keep power backup
- ▶ Keep medicines at your disposal
- ▶ Store dry food and drinking water in sufficient amount
- ▶ Keep your cellphones and power banks fully charged
- ▶ Plan for your pets

Helpline (Bhubaneswar)
1800 345 0061 / 0674 2431253

#HelpFellowBBSRite #BeAlert

8 replies, 19 likes

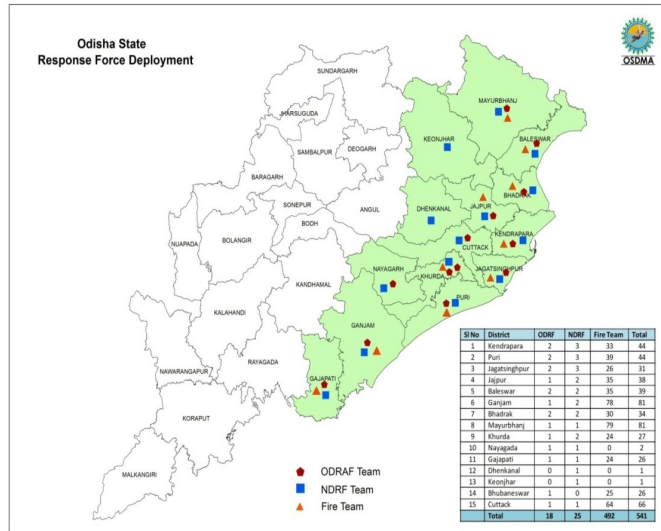
PREPARING FOR IMPACT

- Administration on **high alert**
- **Senior officers** assigned to districts
- **24X7** control rooms
- **Satellite phones and wireless** sets deployed to each districts
- **Response force** deployed strategically



Multi-agency control room in BBSR

PREPARING FOR IMPACT



- Response force deployed strategically
 - 20 – ODRAF Teams
 - 44– NDRF Teams
 - 525 – Fire and Disaster Response Teams

PREPARING FOR IMPACT



PREPARING FOR IMPACT

DEPARTMENTAL PREPAREDNESS

- **Works Department**
 - **Field engineers sensitized** for water tightness of the EVM strong rooms
 - **Material, Man & machineries kept in readiness** for immediate deployment in vulnerable locations.
- **PR & DW Department**
 - Operational condition of **2,86,731 tube wells ensured**
 - **428 vehicles** in readiness for carrying **734 PVC water tanks**
 - **373 Mobile repairing units** kept ready
 - **337 DG sets with fuel and 203 local electricians** arranged for piped water supply and immediate maintenance.
 - **3840 overhead tanks** kept ready with waters



PREPARING FOR IMPACT

DEPARTMENTAL PREPAREDNESS

- **W&CD Department**
 - Instruction issued for **adequate stocking of Take Home Ration (THR) & food stuff** in all AWC & NGO run Institutions
 - Instruction to provide **THR and eggs for children of the age group of 6 months-3 years and pregnant & nursing women** in advance for 7 days.
- **Department of Energy**
 - **Advance placement of skilled man power and materials** like steel poles, cement concrete poles, conductors, cross arms and distribution transformers and other accessories for quick restoration of power supply in case of any eventuality.

PREPARING FOR IMPACT

DEPARTMENTAL PREPAREDNESS

- **H&UD Department**
 - 208 Tankers arranged
 - 170 DG sets arranged
 - Control room for drinking water issues setup in all ULBs
- **H&FW Department**
 - Power back ensured at labour room, cold chain points, SNCUs, NICUs, Casualty, OTs and Special wards
 - Funds @ Rs. 5 Lakhs each for high focus districts provided immediately from the Public Health Response Fund for contingencies and 102/108 ambulances put on alert.
- **Department of Rural Development:**
 - All Rural Works Divisions in readiness with men, material and machineries for immediate closure of breaches and resolve dislocation of traffic

ଫୋନି ରାତ୍ୟା ସମ୍ପର୍କିତ ସ୍ୱାସ୍ଥ୍ୟ ସତର୍କତା

ବାଚ୍ୟା ଆସିବା ପୂର୍ବରୁ

- ▶ ଉର୍ଦ୍ଧ୍ୱତା, ଶିଶୁ, ଦୁର୍ବ, ଦୁର୍ବଳା ଓ ଅସୁସ୍ଥ ବ୍ୟକ୍ତିଙ୍କୁ ନିରାପଦ ସ୍ଥାନକୁ ନେଇଯାଆନ୍ତୁ ।
- ▶ ଅସୁସ୍ଥତା ଓ ମା'କୁ ମା'କୁଟ ସିନ୍ଧୁ ଚାକରଗାନ୍ତୁ ସ୍ଥାନାନ୍ତର ପାଇଁ ବ୍ୟବସ୍ଥା କରନ୍ତୁ ।
- ▶ ପିତାମା ପାଇଁ ଓ କରୁଣା ଶିକ୍ଷା ଆଇଡି କରନ୍ତୁ ।
- ▶ ଆକାଶଚିତ୍ର, ଅନୁପ୍ରାପ୍ତି କର୍ମୀ ଓ ସ୍ୱାସ୍ଥ୍ୟକର୍ମୀଙ୍କ ସହ ଯୋଗାଯୋଗ କରନ୍ତୁ ।

ବାଚ୍ୟା ସମୟରେ

- ▶ ବିଦ୍ୟୋଗ୍ୟତ ପାଇଁ ବିଧି ପୁନଃପାଠି ପଢନ୍ତୁ ।
- ▶ ବାଚ୍ୟା ସମୟରେ ବାଚ୍ୟାଙ୍କୁ ବାଚ୍ୟାଙ୍କୁ ନାହିଁ ।
- ▶ ଘରର କବାଟ ବନ୍ଦକରି ବାଚ୍ୟାଙ୍କୁ କରନ୍ତୁ ।
- ▶ କରୁଣାକାରୀଙ୍କୁ ସ୍ୱାସ୍ଥ୍ୟକର୍ମୀ ପାଇଁ ୧୦୨/୧୦୮ ଆସ୍ତ୍ରୋପାଦ୍ଧି ସହାୟତା ନିଅନ୍ତୁ ।

ବାଚ୍ୟା ପରେ

- ▶ ଉର୍ଦ୍ଧ୍ୱତା, ଶିଶୁ, ଦୁର୍ବ, ଦୁର୍ବଳା ଓ ଅସୁସ୍ଥ ବ୍ୟକ୍ତିଙ୍କ ସହ ପ୍ରତି ଦିନେ ଯୋଗାଯୋଗ କରନ୍ତୁ ଏବଂ ଅନୁପ୍ରାପ୍ତିକରଣ ଆକାଶଚିତ୍ର ବିଧି ସ୍ୱାସ୍ଥ୍ୟକର୍ମୀଙ୍କୁ ପ୍ରତିଦିନ କରନ୍ତୁ ।
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- ▶ ଖାଲି ଅସୁସ୍ଥ ଏବଂ ଶାରୀରିକ ପରେ ଚାଲୁ ସ୍ୱାସ୍ଥ୍ୟରେ ଉଦ୍ଦେଶ୍ୟରେ ସହାୟତା କରନ୍ତୁ ।
- ▶ ନିର୍ଦ୍ଦିଷ୍ଟ ମହାଜଳା ପାଣି କରନ୍ତୁ । ଘର ବାଧିପାଶା ସହାୟତା କରନ୍ତୁ ।
- ▶ ସାଧାରଣତା ପ୍ରତି ସାଧାରଣ ସ୍ୱାସ୍ଥ୍ୟ ଓ ସାଧାରଣତା ଯୋଗାଯୋଗ ପ୍ରତି ସହାୟତା କରନ୍ତୁ ।

ସମସ୍ତ ସ୍ୱାସ୍ଥ୍ୟକର୍ମୀଙ୍କୁ ବାଚ୍ୟା ବିଦ୍ୟୋଗ୍ୟତ ନିଶ୍ଚୟ କରନ୍ତୁ ଏବଂ ସହାୟତା କରନ୍ତୁ ।

PREPARING FOR IMPACT

STOCK OF ESSENTIAL MATERIAL

- Dry food stock
- 1 Lakh food packets for air drop
- 5,97,006 polythene rolls
- 32,01,100 water pouches
- Tree cutting equipment, excavators, other rescue & relief related machinery and manpower deployed strategically
- ORMAS, IDCO and Civil Society Organisations engaged for food packaging
- Two helicopters requested from Air force



PREPARING FOR IMPACT



- Review by Hon'ble Chief Minister
- Review by Chief Secretary
- Inter Departmental Coordination Meeting
- NGO Coordination Meeting

EVACUATION – *Every Life Counts* Approach



24 hours

15.5 Lakh people

25,000 Tourists

Highest ever evacuation

EVACUATION – *Every Life Counts* Approach

Special Care For Vulnerable Section



AROUND 2000 PREGNANT WOMEN



ALL POSSIBLE HOMELESS PEOPLE



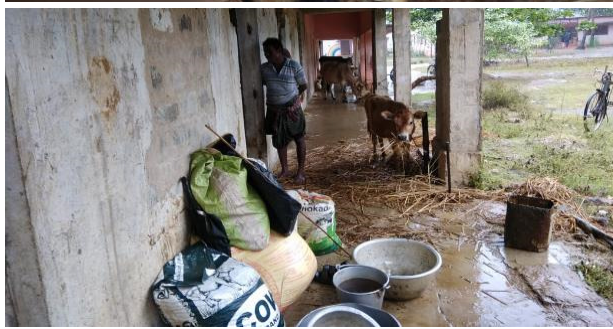
SPECIALLY ABLED



OLD

EVACUATION – *Every Life Counts* Approach

LIVESTOCK EVACUATION



CYCLONE SHELTERS



CYCLONE SHELTERS



FREE KITCHEN



EVACUATION – *Every Life Counts* Approach



Mami Mizutori
@HeadUNISDR

Follow

India's zero casualty approach to managing extreme weather events is a major contribution to the implementation of the [#SendaiFramework](#) and the reduction of loss of life from such events. I look forward to hearing more about [#CycloneFani](#) at the [#GP2019Geneva](#) May 13-17.



UNDRR @unisdr

Advisory distributed by @ndmaindia and local authorities days before #CycloneFaniUpdates made landfall in effort to minimize loss if life and injury #GP2019Geneva #ResilienceForAll #CycloneFani

2:31 PM - 3 May 2019

295 Retweets 472 Likes



26

295

472

✉

Global appreciation for evacuation & protection. . .

“One of the largest evacuation within 24 Hours”

CYCLONE FANI HITS ODISHA

3rd May' 19 at Puri around 9 am

CYCLONE FANI TRACK – 3rd May

1. Landfall – 8.00 AM, May 3rd 2019 near Puri town

Eye entering into the land took two hours

Gale wind speed reaching 175-185 kmph **gusting to** 205 kmph

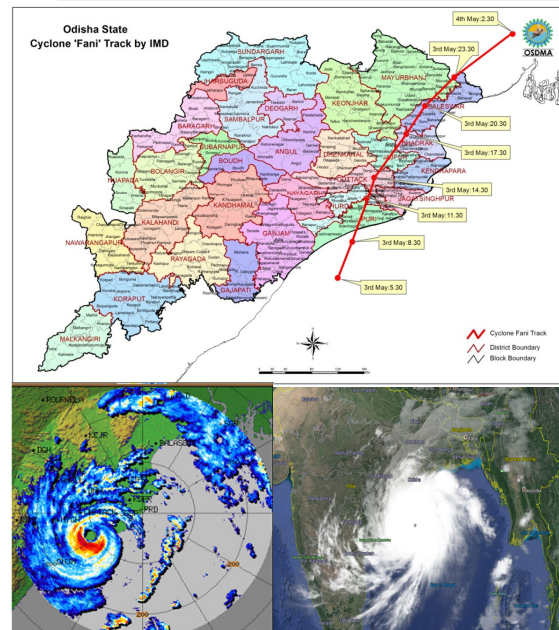
2. Kept **moving north-northeastwards** and entered Bhubaneswar.

3. Passed over

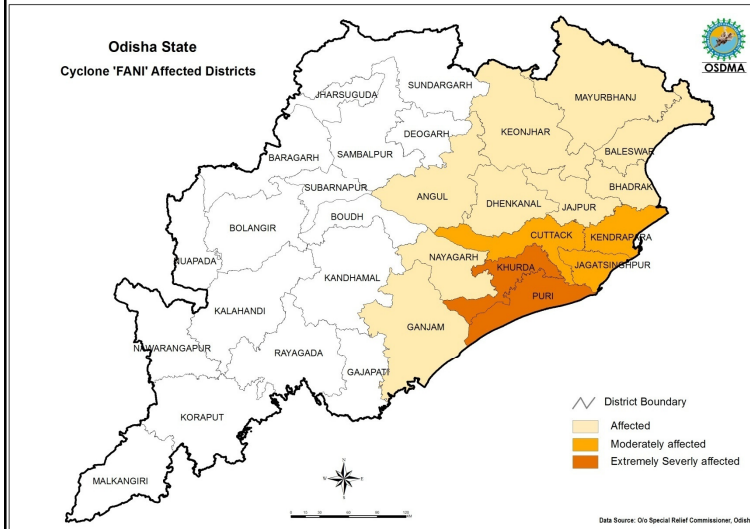
- i. Cuttack,
- ii. Jagatsinghpur,
- iii. Kendrapara,
- iv. Jajpur,
- v. Bhadrak,
- vi. Balasore
- vii. Mayurbhanj

Very heavy rainfall occurred in many parts of the state.

Source: IMD, Bhubaneswar



AFFECTED AREAS



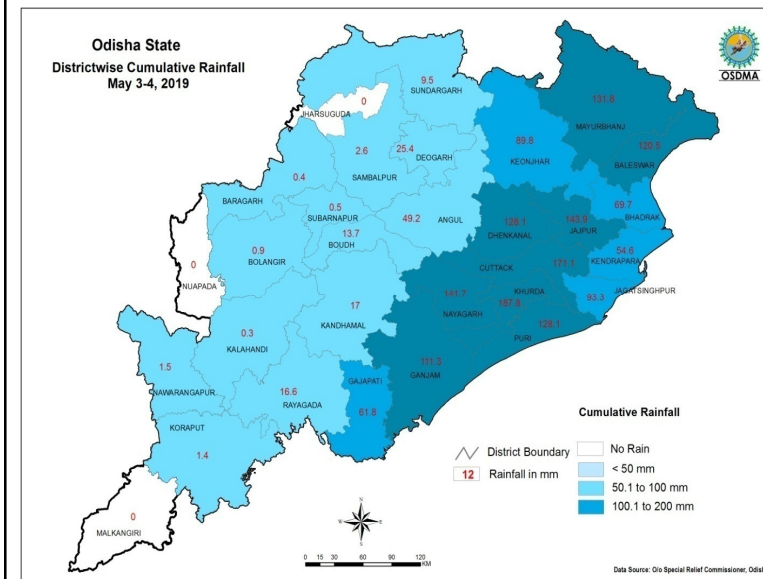
18,388 Villages | 51 Towns

>1.5 Crore population

14 Affected districts

1. Puri
2. Khurda
3. Cuttack
4. Mayurbhanj
5. Keonjhar
6. Baleswar
7. Bhadrak
8. Jajpur
9. Angul
10. Dhenkanal
11. Nayagarh
12. Ganjam
13. Kendrapara
14. Jagatsinghpur

Rainfall



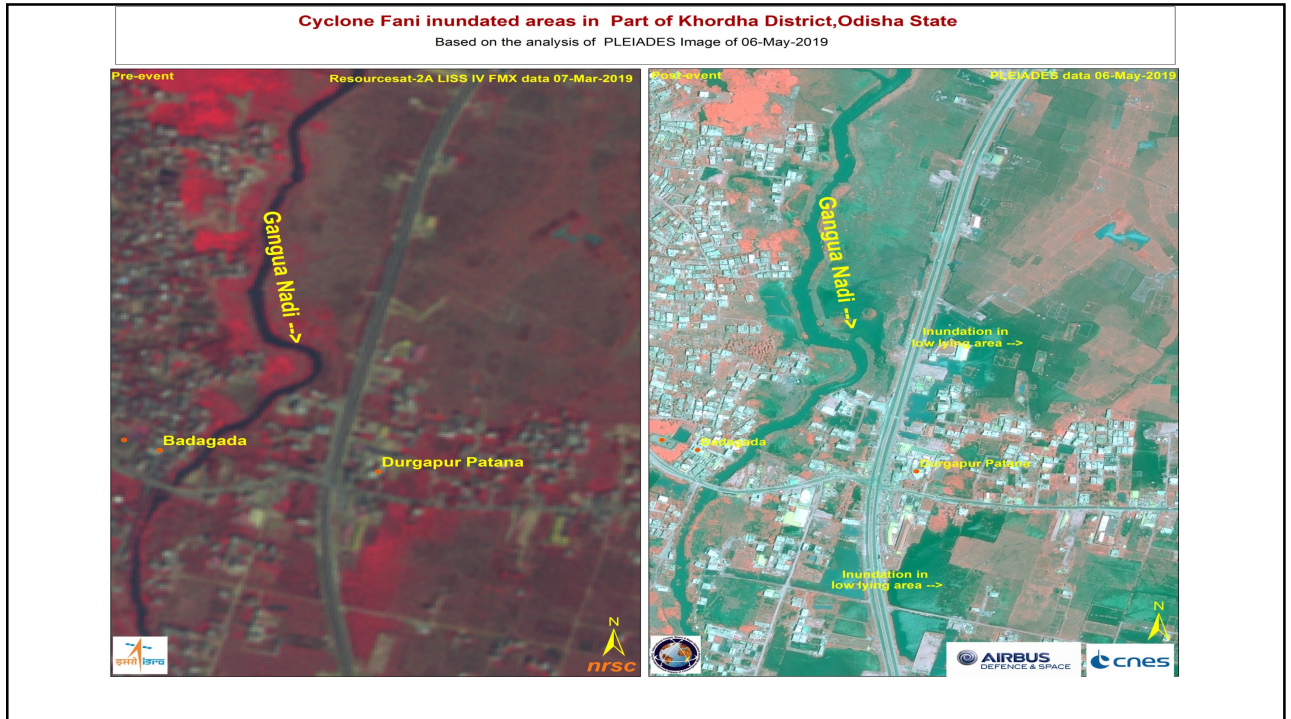
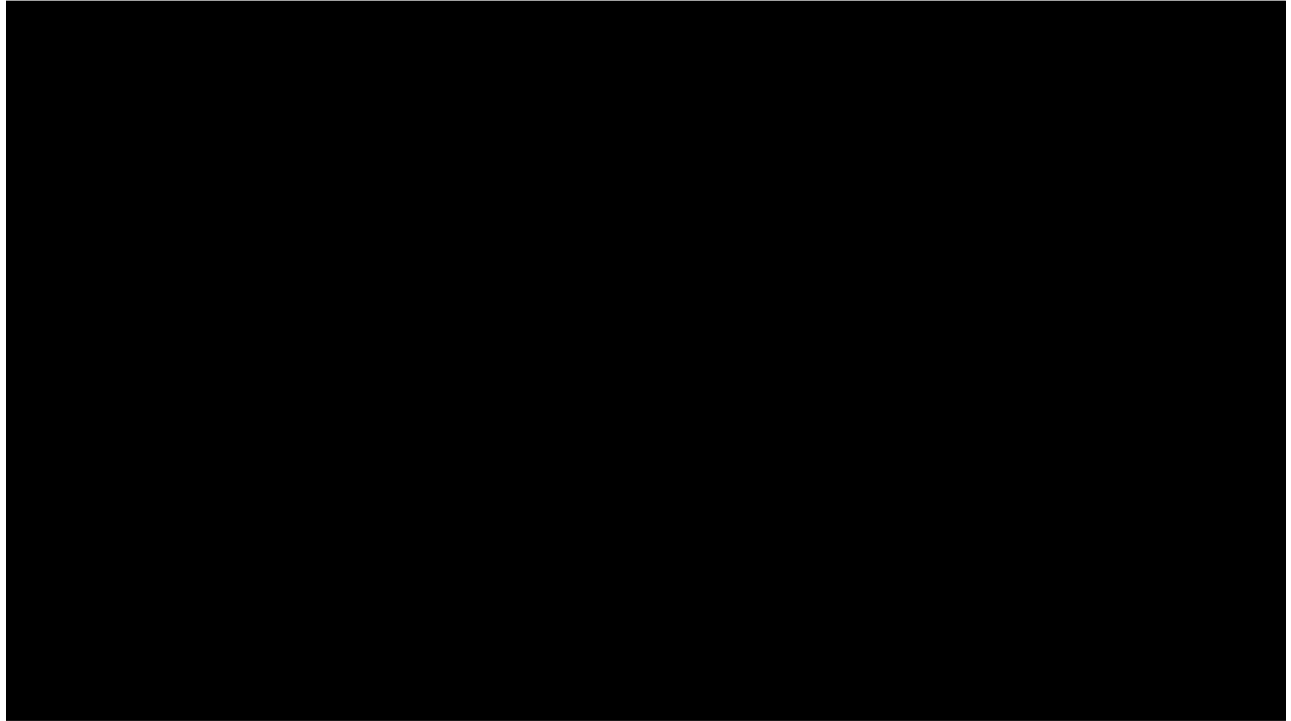
9 districts > 100 mm

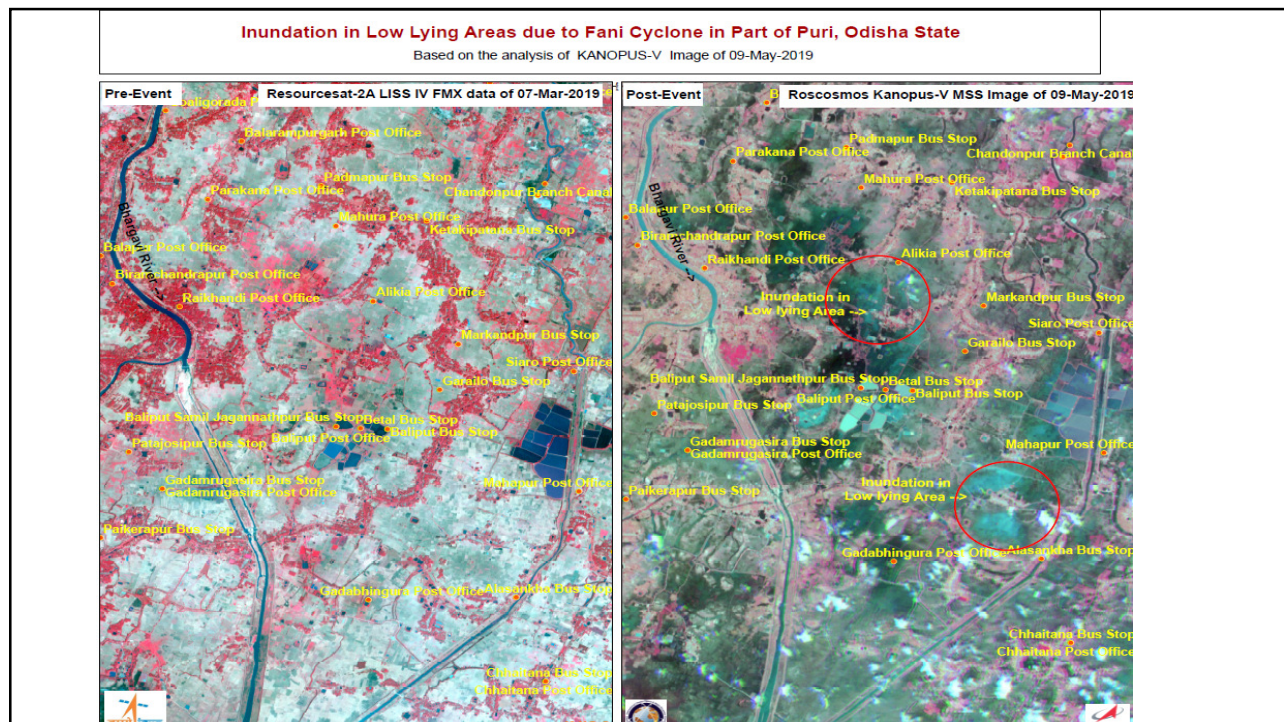
Khordha districts -187.8 mm

Cuttack- 171.1 mm

Jajpur- 143.9 mm

Nayagarh- 141.7 mm.





DEVASTATION . . .



- 1.6 Crore population affected
- More than 5 Lakh houses damaged
- Approximately 41 lakh Livestock perished (LA- 2587, SA- 2826 & Poultry- 40.69 lakh)
- 64 Human Casualty

Damage viewed from Satellite

Wind Induced Damages to Urban Infrastructure due to Fani Cyclone Part of Puri, Odisha State

Based on the analysis of PLEIADES Image of 07-May-2019



DEVASTATION . . .



1,89,095 houses damaged in PURI

DEVASTATION . . .



DEVASTATION . . .



DEVASTATION . . .



DEVASTATION . . .



DEVASTATION . . .



DEVASTATION . . .



DEVASTATION . . .



DEVASTATION . . .

Wind Induced Damages to Urban Infrastructure due to Fani Cyclone Part of Bhubaneswar City, Odisha State
Based on the analysis of PLEIADES Image of 06-May-2019



DEVASTATION . . .



DEVASTATION . . .

BEFORE



AFTER



View from OCAC Tower

DEVASTATION . . .

BEFORE

AFTER

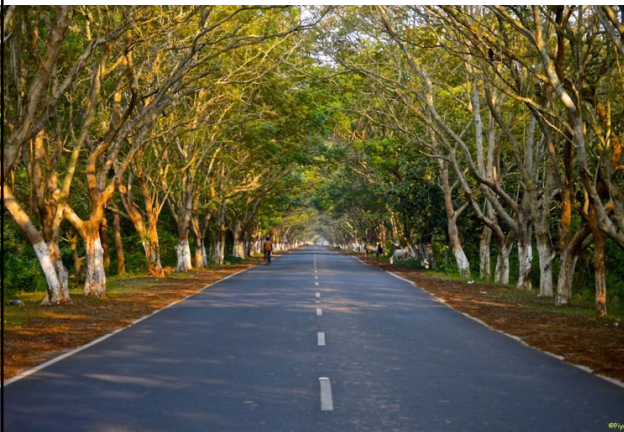


Janpath View

DEVASTATION . . .

BEFORE

AFTER



PURI KONARK ROAD

ROAD BLOCKAGE



POWER SUPPLY DEVASTATED



TELE COMMUNICATION DISRUPTED



MASS TRANSPORTATION AFFECTED



Wind Induced Damages to Urban Infrastructure due to Fani Cyclone Part of Puri, Odisha State

Based on the analysis of PLEIADES Image of 07-May-2019



DAILY LIFE DISRUPTED

- **Water supply** disrupted
- **Summer crops**, orchards, livestock and plantations devastated at large scale
- **Extensive damage** to all public infrastructure
- **Huge destruction** of houses and private establishments



INTERNATIONAL MEDIA

The New York Times

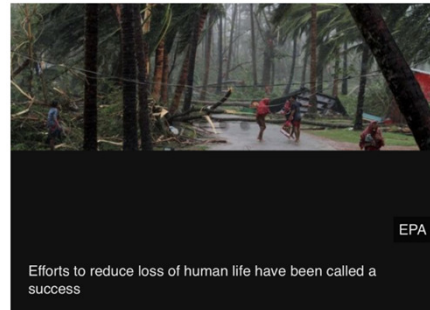
How Do You Save a Million People From a Cyclone? Ask a Poor State in India



BBC NEWS

India Cyclone Fani evacuation efforts hailed a success

04 May 2019 | Asia



SOCIAL MEDIA

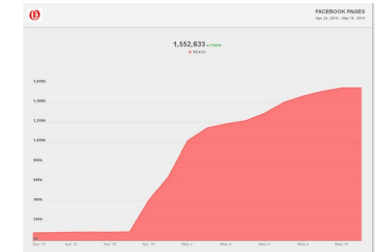
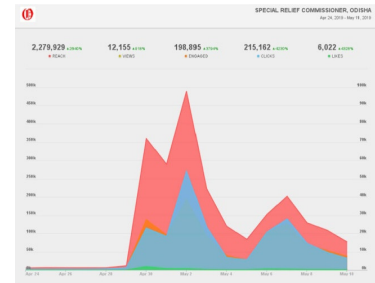
Mami Mizutori Retweeted
 UNDRR @undrr - 24h
 India's 'zero casualty' policy, pinpoint warnings minimised #CycloneFani deaths
 #ResilienceForAll ecoti.in/71ku9Z via @economictimes



India's 'zero casualty' policy, pinpoint warnings minimised Fani deaths
 "IMD seem to have done a very good job in terms of minimising the possibility for loss of life," Denis McClean, a spokesperson for the ODRR
 economictimes.indiatimes.com



Social Media Analytics from April 27th 2019 to 5th May 2019



SOCIAL MEDIA



Naveen Patnaik ✓ @Naveen_Odi... · 19h ✓

#CycloneFani is one of the rarest of rare summer **cyclones** to hit **#Odisha** in 43 years. It is also one of the three to hit in last 150 years. **#Odisha** undertook the challenge to lead one of the biggest human evacuations in history, shifting 1.2 million people to safety in 24 hours.



Debabrata Mohanty ✓ · 8h ✓

At the weather monitoring station on Puri sea beach the Anemometer clocked **Cyclone Fani** at 274 km before the winds broke it on May 3 morning. By all available indications it was as strong as 1999 super **cyclone**.



Erik Solheim ✓ @ErikSolheim · 9h ✓

Cyclone Fani, the strongest to hit India in 20 years.

Bends trees and knocks out power lines. But very few people died thanks to good preparations and fantastic efforts by people of Odisha.

Shows that climate adaptation works! 👍



ANI ✓ @ANI · May 3 ✓

Odisha: **#Visuals** from a relief camp in Puri; Jayanti, a Red Cross member, says, "1,000 people have been evacuated. Many people aren't willing to come, scared their belongings will be stolen. But we'll evacuate them tomorrow morning at any cost. We want zero casualty." **#FaniCyclone**

AERIAL SURVEY BY HON'BLE CHIEF MINISTER



Tentative Loss to Public Properties

Sl.	Departments	Loss (Rs. in lakh)
1	Water Resources Department	37090.5
2	Works Department	86826.63
3	Rural Development Department	43577.67
4	Housing & Urban Development Department	49822.13
5	Panchayati Raj & DW Department	47598.53
6	Agriculture & FE Department	17569.32
7	Energy Department	115977.07
8	Fisheries & Animal Resources Department	3343.85
9	ST & SC Dev., Minorities & Backward Classes Department	866.29
10	Women & Child Dev. Dept.	7431.71
11	Handlooms, Textile & Handicrafts Dept.	1741.50
12	Cooperation Department	3288.59
13	Higher Education Department	29600.00
14	Health & Family Welfare Dept.	16323.97
15	SSEPD Department	1827.41

Tentative Loss to Public Properties

Sl.	Departments	Loss (Rs. in lakh)
16	Labour & ESI Department	78.00
17	Forest & Environment Dept.	53780.00
18	Tourism Dept.	52402.93
19	Skill Development & Technical Education Dept.	5756.00
20	Damage to properties of E & IT Dept.	1411.02
21	Science & Technology Department	663.19
22	Home Department	11397.76
23	Industries Department	15269.07
24	Odia language, Literature and Culture Dept.	7834.00
25	Commerce & Transport Department	1219.20
26	Revenue & DM Department	10000.00
27	General Administration & PG Department	25594.39
28	Micro, Small & Medium Enterprises Department	10557.68
29	Damage to Multipurpose flood/ cyclone Shelters	5005.00
30	Damage to properties of Shree Jagannath Temple, Puri	510.00
	Total (Public Properties)	664363.41

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	Total (Public Properties)	664363.41

Pure Relief Items		
Ex-gratia for loss of life		256.00
Clothing & Utensils		5163.29
GR kind for dire need of sustenance		60656.55
Cost of evacuation, search & Rescue measure		2521.24
Temporary accommodation		3009.91
Temporary shelter		8570.82
Emergence supply of drinking water		4563.03
Clearance of debris		7314.88
Draining of flood water from the affected areas		33.00
Disposal of dead bodies/Carcasses		437.56
Repair/restoration of fish ponds		4.13
Agriculture input subsidy-SMF		14889.99
Agriculture input subsidy-other than SMF		429.74
Replacement of Milch/ Draught animals		950.92
Provision of fodder and cattle health care		2432.85
Assistance to fisherman		631.89
Input subsidy-Fish seed farm		3.55
Assistance for Artisan-Traditional crafts & Handloom weavers		9310.94
House Building Assistance		148083.53
	Total	269263.82
	Grand Total	933627.23

Restoration Measures

FREE KITCHENS CONTINUED



ROAD CLEARANCE STARTED IMMEDIATELY



ALL MAJOR ROADS CLEARED within 48 hours



Restoration of Roads

- All PWD and NH roads cleared and traffic was restored within 72 hours.
- All 1977 blocked roads under RW divisions cleared and 144741 no. of fallen trees were removed.
- The uprooted trees in all rural roads including GP/PS roads were cleared within a week time.

OTHER ACTIONS-within 48 hours

- Approx. **2Lakh+** of polythene rolls distributed
- **Train services resumed** to normalcy from Bhubaneswar
- **Diary plants are fully operational in Bhubaneswar. 25 mobile milk units and 06 e-carts of OMFED** are supplying milk in Bhubaneswar.
- **15,889 packets of relief materials** (Chuda, Gur, Biscuit, Candle, Match Box & Salt) handed over to Puri, **4632 packets to Khordha and 800 packets to E. Co. Rly.**

HON'BLE CHIEF MINISTER'S PACKAGE

- **Puri and Khorda (severely affected) - 50 KG of rice plus Rs. 2000/- and polythene for all families**
- **Cuttack, Kendrapada and Jagatsinghpur (moderately affected). Rs. 500/- & additional one month quota of rice,** for the families covered under Food Security Schemes
- **All affected districts one month additional pension and house building assistance** as per relief code -
 - Rs. 95,100/- for fully damaged structures
 - Rs. 5,200/- for partially damaged structures and
 - Rs. 3,200/- for minor damages will be provided
- For all other affected districts, relief distributed as per NDRF/ SDRF norms.
- **Reconstruction of completely damaged houses** under housing schemes.
- **Compensation to Agriculture, horticultural and animal resources & fisheries** loss after assessment
- **Tree plantations** on mission mode immediately after relief and restoration

Power restoration

- Extensive damage to both electrical transmission and distribution infrastructure.
- Manpower mobilized from
 - DISCOMs,
 - Electrical Contractors,
 - CPSUs like NTPC, PGCIL & NALCO,
 - Corporate houses like Tata Power and L& T
 - State Power Companies from West Bengal, Andhra Pradesh, Kerala & Karnataka.
- Around 6000 nos. of workmen engaged for restoration of distribution infrastructure
- Around 800 nos. of workmen were engaged in reviving the transmission infrastructure.
- Materials were diverted from on-going schemes



Power restoration

- Immediate procurement of 60,000 steel poles from SAIL and 40,000 PSC (cement) poles from State based manufacturers and from neighbouring states
- Distribution transformers and other major materials arranged through Odisha based manufacturers.
- Department of Energy approved higher labour rates @1.5 times of the existing rates labourers and Rs. 150 per day as fooding charges.
- Restoration works in districts under SOUTHCO (Ganjam, Gajapati, Rayagada & Kandhamal) & NESCO (Jajpur, Bhadrak, Balasore, Keonjhar & Mayurbhanj) are completed.



Power restoration

- Restoration in Angul, Dhenkanal, Nayagarh, Kendrapada, Jagatsinghpur are completed and are near completion in Khurdha (including Bhubaneswar) and Cuttack.
- Restoration works in Puri are being expedited and works will be completed within the targeted period.
- Power supply to 45.22 lakh consumers has been restored as against the affected 46.27 lakh.
- Affected EHV Grids all 31 nos. have been restored and further 1849 HT feeders and 57,264 DTRs are restored



WATER SUPPLY PROVISIONS



339 no. of tankers, 214 no. of DG sets and 1029 no. of PVC tanks deployed for ensuring water supply immediately

Pipe Water Supply in Rural Areas

- All 2298 affected PWS in Puri, Khordha, Kendrapada, Jagatsinghpur, Cuttack, Bhadrak and Jajpur districts were restored and fully operationalized.
- Out of 2298 affected PWS, 611 have been operationalized through Gensets and 1687 have been operationalized through electrification or solar.
- Water supply was also ensured through 526 no. of water tankers.



Drinking Water and Sanitation in ULBs

- PHEO ensured water supply in the evening of 3rd May 2019
- Pre-positioned DG sets were made operational immediately after the cyclone
- Additional heavy duty DG sets, water tankers and PVC tanks were arranged from neighbouring States, Central & State PSUs and Private sector organisations
- Required technicians were airlifted from Kolkata by IAF Helicopter in view of the emergent need for additional water.
- With the mobilization additional tankers and DG sets water supply was brought back to normalcy in 48 out of 53 affected ULBs (90%) within 48 hours.

Drinking Water and Sanitation in ULBs

- Normal water supply was restored in all affected 53 Urban Local Bodies by 09.05.2019
- For clearing of roads, removal of fallen trees and piled up garbage and for maintaining sanitation in the urban areas, 5000 sanitation workers and 600 senior officers engaged
- More than 860 JCBs, Dumpers, Tractors and Tata ACEs were in service
- Disinfectants are also used extensively in sanitation works to ensure preventive health care.

International Appreciation



Regional Integrated Multi-Hazard Early Warning System
Program Unit Early Warning Facility
2nd Fl, Outreach Bldg, Asian Institute of Technology Campus, P.O. Box 4 King Learng, Pathumthani 12120, Thailand
(t) +66 2526 5900 to 11 (f) +66 2526 5902 (a) rim@rima.aist.ac.th (w) <http://www.rimes.aist.ac.th>

PURIMES/2019/024

9 May 2019

Sri Bishupada Sethi
Managing Director
Odisha State Disaster Management Authority
Rajiv bhawan, Unit 5, Bhubaneswar
Odisha, India 751001
Email: md@osdma.org

Subject: Appreciation of OSDMA's excellent performance in managing Cyclone Fani

Dear Sri Bishupada Sethi,

Kind greetings from RIMES!

Please accept our warmest congratulations to Odisha State Disaster Management Authority (OSDMA), on excellent management of hazard risks from potentially destructive Cyclone Fani.

Cyclone Fani's strength was similar to the intensities of very severe cyclones across the globe. We note, with heartfelt appreciation, the proactive use by OSDMA of IMD forecasts, particularly in the evaluation of potential secondary hazards, analysis of likely impacts, and assessment of risks, the findings from which informed OSDMA's preparedness planning days before cyclone impact, pre-positioning of human and material resources for rescue and relief, vigorous warnings to populations at risk, and the gargantuan task of evacuating about 1.2 million people.

Our profound appreciation goes to the strong leadership of OSDMA and its dedicated staff and selfless volunteers in the very successful management of Cyclone Fani. Documentation of successes and lessons from this extreme weather event would be a noteworthy undertaking, for dissemination/sharing to countries in the region and beyond. Indeed, OSDMA has set an exemplary model on hazard impact forecast-informed preparedness.

We look forward deepen and broaden our collaboration with OSDMA to replicate lessons learned from your experience with all RIMES Countries.

Yours sincerely,


A.R. Subrah
Director

*Not only we prevented one disaster of **humongous proportion**, after hit by a near **Super cyclone**. We are in the process of restoring critical infrastructure with our **resilient preparedness**. This is a **transformation Odisha has had** and thanks to **4.5 Crore people** who made this possible.*

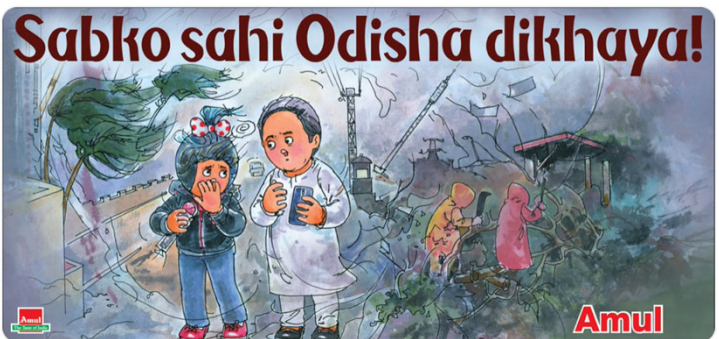
- Shri Naveen Patnaik



TOWARDS A NEW AND EMPOWERED ODISHA

Focus on
**Teamwork,
Transparency & Technology**
For
Transforming Odisha

 CMO.Odisha / Naveen.Odisha  @CMO_Odisha / @Naveen_Odisha  @Naveen_Odisha



Sabko sahi Odisha dikhaya!

Amul

4:40 AM - 6 May 2019

THANKYOU