REAL TIME GOVERNANCE IN DISASTER RISK REDUCTION
POPULATION GROWTH & ENVIRONMENTAL QUALITY

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Dept. of Real Time Governance, Govt. of Andhra Pradesh
Climate Change

- Rising temperatures, droughts and desertification leading to diminishing water resources, malnutrition and increased levels of waterborne diseases such as diarrhoea and vector-borne diseases such as malaria.
- Heavy precipitation, flooding and loss of water security, leading to severe mental and physical trauma and an increase in injuries and deaths by drowning.
- Extreme weather events leading to cyclones, floods and droughts.
- Rising sea levels that will primarily affect communities living in small island developing states (SIDS), settlements alongside major river deltas and low-lying coastal areas.
What is Disaster Risk Reduction & Climate Change?

• Disaster risk is the potential loss – expressed in terms of the lives, health status, livelihoods, assets and services – to a particular community or society due to the impact of a natural hazard.

• **Disaster risk reduction (DRR)** is a systematic approach to identifying, assessing and reducing the risks of disaster. It aims to reduce socio-economic vulnerabilities to disaster as well as dealing with the environmental and other hazards that trigger them.

• **Climate change** is a change in the statistical properties of the climate system when considered over long periods of time, regardless of cause. Accordingly, fluctuations over periods shorter than a few decades.

• Climate change will generally increase disaster risks – not only through the increased frequency and magnitude of extreme weather events and sea-level rise. Ecosystems are degraded, and societies will become more vulnerable to hazards.
What is Real Time Governance

- Swift and agile system of governance and public service delivery

- Bring positive ‘disruptive’ changes in Public Administration & Management by leveraging the tools of e-Governance, technology and electronic communication and associated administrative reforms.

- To develop Good governance practices at all institutional levels for effective provisioning of public services, adopting international standards of governance.

- To bring in meta-level trends in governance in line to the expectations and aspirations of the polity, through cognitive governance and robust beneficiary feedback mechanisms that impact the citizenry in real time.

- Enhancing decision support systems, institutionalizing key performance indicators

- Symmetry in collation of data/information
   • a once in 12 years Kumbh mela kind congregation in River Krishna with a footfall nearly 2 crore pilgrims
   • Established a Command & Control Centre with multi-disciplinary teams

2. State Command & Control Centre (2016-17)
   • A pilot of State Command & Control for a period of 1 year
   • The state centre was effective in monitoring floods, rainfall and drought situation

3. Creation of RTG, 2017
   • To provide efficient systems of governance adopting most advanced technology - CC Cameras, Drones, Biometric augmented technology, virtual reality, machine learning, etc

Krishna Pushkaram – https://www.youtube.com/watch?v=pCpsHxs7Esg&t=145s
Real Time Governance

- A Unified Platform Ecosystem with Data Integration from Multiple Departments & Sources
- Enabling Data Driven Decision Making in Real Time
- Ultimate Objective of Achieving 80% Citizen Satisfaction

GOVERNMENT
- Agile
- Seamless
- Dynamic
- Data Driven

CITIZENS
- Empowered
- Connected
- Aware
- Satisfied

Real Time Governance

Work Flows

AP Fiber
RTGC – Sections

Conference Room
Strategy Room
Control Room

RTG-State Annexe

RTG District Centres
Andhra Pradesh is the First State to:

- Reach 100% Saturation
- Applications on Aadhaar

- Family Profile
- Village Profile
- Govt. Benefits
Golden Data
Families enumerated so far in PSS

Men
2.25 Cr

Women
2.24 Cr

4.49 Cr people enumerated

PEOPLE HUB
Praja Sadhikara Survey

People Hub

Data updates from Villages

Beneficiary Updates from departments

Backbone for Strategizing Welfare Schemes
Land Hub
Integration, Transparency, Convenience

To Modernize Land Records

- **2.84 cr** Agricultural Parcels
- **0.50 cr** Urban Properties
- **0.85 cr** Rural Properties

To Uniquely Identify Properties
11-Digit Bhudhaar
28.818.224.703

To Provide Integrated Services
- Bhu Samacharam
- Mutation-as-a-Service
- e-KYB Authorization
Bhudhaar is for every property, just as Aadhaar is for every resident.
Comprehensive Financial Management System

- Integrated digitized financial module for all gov. departments

E-Office & E-Cabinet

- Paperless Offices
- Seamless Processing of Files

Bio Metric Attendance

- Real Time Attendance using Aadhaar
- Connected to Schools | GPs | PHCs | All Depts

AP Cloud

- Microsoft – Azure Hybrid Cloud

AP Content Corporation
IOT (Internet of Things) - (Censors & Devices)

- Ground Water
- Rainfall
- Temperature
- Air Quality
- Reservoir Status

AWARE: Andhra Pradesh Weather Forecast & Early Warning Research Center
IOT
Internet of things

**SURVEILLANCE**
- Wrong direction detection
- No parking detection
- Zone monitoring
- Redlight violation detection system
- Automatic number plate recognition

**VIRTUAL CLASSROOMS**
- 4000 Schools to be connected virtually
- 8,00,000 Students
- 651 Mandals
- 13 Districts

**DRONES**
- Live Stream
- Mapping / Survey
- Spraying Pesticides

**LOCKED HOUSE MONITORING SYSTEM**
- Real Time Alerts
- Prevention
- Capture & Resolve
Cyclone Fani

- **25th Apr**: Cyclone Fani started as a well marked low pressure system in Equatorial Indian Ocean & adjoining south-east Bay of Bengal tracking Northward direction
- **26th Apr**: Turned into a depression
- **27th Apr**: Formed into a tropical cyclone Fani at 1300 km south-east of Chennai. Cyclone had a north north-west ward movement and was predicted to recurve north/north-eastward from Indian coast
- **29th Apr (8.49 PM)** – Intensified as severe cyclone in south central Bay of Bengal – 760 km south east of Chennai
- **30th Apr (4.15 PM)** – Very Severe Cyclone Fani – Alert for North Andhra especially Srikakulam district with very heavy rainfall and winds upto 110-120 kmph
- **1st May** – Fani located at 380 KM south-east of Machilipatnam, Orange alert for North of Srikakulam
- **2nd May** – Extremely Severe Cyclone Fani at 450 km east of Machilipatnam – intensifies as super cyclone 17.30 IST (JTWC)
- **3rd May (1.00 AM)** – 120 km East of Srikakulam
- **3rd May (5.24 AM)** – 60 km East of Ichchapuram & passes off AP coast
- **3rd May (10.00 AM)** – Landfall of Fani completes near Puri, Odisha
Preventive Measures towards Cyclone Fani

Fishermen Alerts – 58,186 Citizens (15 times)
• RTGS alerted fishermen of AP coast beginning 27th Apr when cyclonic formation was observed.
• Fishermen were advised against Deep see fishing.
• IVRS alerts were sent to Fishermen advising them not to venture into sea

Citizen Alerts – 15.37 Lakhs citizens (2 times)
• Citizens were alerted on the precautionary measures to be taken during cyclone in 19 high impact mandals of Srikakulam, Vizianagaram and Visakhapatnam

Transport Alerts - 80,746 people (2 times)
• Light and heavy vehicle owners were alerted in the vulnerable routes identified, advising against travelling during cyclone

Traffic Regulation:
• Based on experiences during Titli and Phethai, considering high winds and heavy rainfall, traffic was regulated in consultation with District Collector and R&B Dept of Srikakulam, in vulnerable routes including National Highways, State Highways - from 8.00 pm 2nd May – 9.00 am 3rd May
Monitoring through Surveillance Cameras.
### Fisherman Alerts:

<table>
<thead>
<tr>
<th>Date Wise</th>
<th>Contact</th>
<th>Non Contact</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-Apr-19</td>
<td>19,981</td>
<td>32,517</td>
<td>52,498</td>
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<tr>
<td>27-Apr-19</td>
<td>64,788</td>
<td>1,13,841</td>
<td>1,78,629</td>
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<tr>
<td>28-Apr-19</td>
<td>44,464</td>
<td>91,173</td>
<td>1,35,637</td>
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<td>29-Apr-19</td>
<td>56,934</td>
<td>178,851</td>
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<td>30-Apr-19</td>
<td>37,270</td>
<td>83,717</td>
<td>120,987</td>
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<tr>
<td>Grand Total</td>
<td>223,437</td>
<td>443,177</td>
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### Campaign Activities:

<table>
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<tr>
<th>Campaign</th>
<th>Unique Dialle</th>
<th>Contact</th>
<th>Non-Contact</th>
<th>Contact%</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>Fisherman</td>
<td>58,186</td>
<td>40,065</td>
<td>18,121</td>
<td>68.86%</td>
<td>Dialed 15 times Daily 3 times</td>
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<tr>
<td>Cyclone Alerts @ Citizens</td>
<td>13,98,890</td>
<td>4,53,325</td>
<td>8,78,544</td>
<td>32.41%</td>
<td>Dialed Twice</td>
</tr>
<tr>
<td>Transport</td>
<td>80,746</td>
<td>38,142</td>
<td>42,604</td>
<td>47.24%</td>
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<tr>
<td>Electricity Restoration (OB)</td>
<td>3,848</td>
<td>1,600</td>
<td>2,248</td>
<td>41.58%</td>
<td>Rechurn in Progress</td>
</tr>
<tr>
<td>Citizen Feedback on Cyclone Measure</td>
<td>3,96,372</td>
<td>1,22,047</td>
<td>2,74,325</td>
<td>30.79%</td>
<td>Rechurn in Progress</td>
</tr>
<tr>
<td>Grand Total</td>
<td>19,38,042</td>
<td>6,55,179</td>
<td>12,15,842</td>
<td>33.81%</td>
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### RTGS Activities for “Fani” Cyclone:

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#RTGS-IMPACT

This is one farmer from Nagaram village, Nagaram mandal in Guntur called 1100 requesting for tarpaulins to cover his harvested paddy considering impending rains. RTGS Informed Civil Supplies who immediately contacted the farmer and provided the same. The farmer can safely store his grains now and get good prices.
Facilitating Paddy Harvesters

#RTGS-IMPACT

RTGS got requests from Agrl Dept that harvesters for paddy upto 50 nos were required in Machilipatnam area to facilitate quick harvest. With the active support of Transport Dept. RTGS facilitated 50 nos of harvester machines to Krishna and 28 nos to Guntur districts through meticulous coordination by SMEs Agrl and Transport. Now the farmers of these areas can feel relaxed as there is no worry their crops gets damaged by impending rains.
Intra-Circle Roaming & Restoration

- Intra-Circle Roaming was for the first time implemented among all telecom service providers in the mandals of Srikakulam on the intervening night of cyclone movement.
- This shall facilitate a person to get through any service provider irrespective of his respective subscription.
- To ensure communication is not disrupted in case of any eventuality.
- 218 sites got affected and all of them got restored in 32 hours.
- Advisory weather alerts were sent to 5 lakh subscribers through WEA/Cell broadcasting technique (message is blasted to all mobile instruments in coverage area).

<table>
<thead>
<tr>
<th>S.No</th>
<th>Service Provider</th>
<th>Total No. of Sites in Srikakulam Dt</th>
<th>No. of sites affected as on 3rd May 8 AM</th>
<th>Restored</th>
<th>Covered through ICR</th>
<th>Balance</th>
<th>% Restored</th>
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<td>300</td>
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<td>2</td>
<td>Jio</td>
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<td>45</td>
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<td>Vodafone Idea</td>
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<td></td>
<td>1171</td>
<td>218</td>
<td>218</td>
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Cyclone Fani Relief – Enumeration Status

- Similar to Cyclone Titli, RTGS released an app for carrying out enumeration of crop, cattle and housing related damages
- A dashboard is also developed to monitor the status of enumeration


<table>
<thead>
<tr>
<th>Department</th>
<th>Total Records</th>
<th>Level 1 Approved</th>
<th>Level 2 Approved</th>
<th>Level 3 Approved</th>
<th>Level 4 Approved</th>
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<td>Department Name</td>
<td>Crop/Damage Type</td>
<td>Total Records</td>
<td>Total Extent (acres)</td>
<td>Total Coconut Tress/Animals</td>
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<td>-----------------</td>
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<td>---------------</td>
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<td>Severely Damaged</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>10,054</td>
<td>1,500</td>
<td>12,365</td>
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</table>
• Climate change adaptation requires that development, social and economic practices be redesigned to respond effectively to new or anticipated environmental changes.

• DRR seeks to influence development decision-making and protect development aspirations from environment-related risks.

• The effectiveness of both adaptation and DRR are limited if they are not viewed within the broader context of sustainable development
Environmental Retreat (1980s)

• Environmental ethics
  • “We have not inherited the earth from our parents; we have borrowed it from our children.”
  • Development is often viewed in materialistic terms.
  • Focusing on resource utility through conservation.
    • Maintenance of life support systems.
    • Working to reduce the threats to those systems represented by erosion, pollution, deforestation, etc.
    • Preservation of genetic diversity.
Average Temperature at the Earth's Surface and World Carbon Emissions From Fossil Fuel Burning (in millions of tons) 1880-2002
Environmental Perception: Who Cares?

- **Global Warming**
  - Very Important
  - Some Importance
  - Little Importance
  - No Importance

- **Air pollution**
  - Very Important
  - Some Importance
  - Little Importance
  - No Importance

- **Hazardous materials**
  - Very Important
  - Some Importance
  - Little Importance
  - No Importance
The Vicious Circle

Poverty → Population → Environment → Instability
The Vicious Circle

- Increase of pressures over marginal land, overexploitation, and deforestation.
- Erosion and floods.
- Increase use of fertilizers, pesticides and water.
- Migration to shantytowns.
- Erosion, salination and floods lower agricultural yields, employment and incomes.
- Overpopulation increases health problems and lowers productivity.
- Short term needs are a priority and forbids environmental protection.
- Development wins over environmental issues.
Material Recycling

- Resource supply
- Production and manufacturing
- Consumption
- Waste or losses
- Post-consumer discards
- Recycled flow
- Recycling
- Landfills, impoundments, Deep wells and ocean disposal
- Releases to air, land and water
- Renewable and Nonrenewable resources
- Sink
Integrating solutions

• Include young people as stakeholders in policy advocacy and planning for climate change adaptation and disaster risk reduction in the education sector. This experience can provide young people with ideal opportunities to learn holistic citizenship and advocacy skills.

• Community-based pilot projects involving youth and schools are important for demonstrating cost-effective solutions for climate change adaptation.

• Non-formal methods can help fill these gaps in access to, and quality of, formal education systems. Alternative approaches to basic education are also critical for making learning relevant to the diverse needs and circumstances of marginalized groups.
Situation Analysis

1. Establish a participatory vision of quality education
2. Determine associated standards and indicators
3. Cover multiple sector topics
4. Disaggregate for disparities
5. Use findings from sector-wide analysis as a baseline
6. Revise standards and indicators
7. Monitor and evaluate to measure progress towards goals
• Defining a common goal.
• Developing standards, indicators and assessment tools.
• Formulating the strategy for mainstreaming and scaling up.
• Advocating for the strategy in political circles and among stakeholders.
• Monitoring the development, implementation and impacts of the mainstreaming process.
• Providing a reporting mechanism to implementing agencies.
Identifying links between education and other sectors

• Agricultural issues
• Energy issues - Access to sustainable energy
• Poor air quality
• Environmental and forestry issues - Deforestation
• Financial and economic issues - Inadequate resource allocation
• Insufficient policy or institutional frameworks.
• Health issues - Increased developmental susceptibility
• Indigenous issues
• Urbanization and housing issues
• Water and sanitation issues – decreasing supply and poor distribution
• Inadequate infrastructure.
MEDIA FEEDBACK

Media Watch

Grievances

Print Media

Electronic Media

Analysis

Citizen feedback

Social Media
Future

Invisible Government
Visible Governance

One Government
People First
Data Driven
One Citizen
Empowering Citizens
Real Time Actions