

# ICT in Disaster Relief

- Indian Ocean Tsunami Experience



**Amarnath Raja**

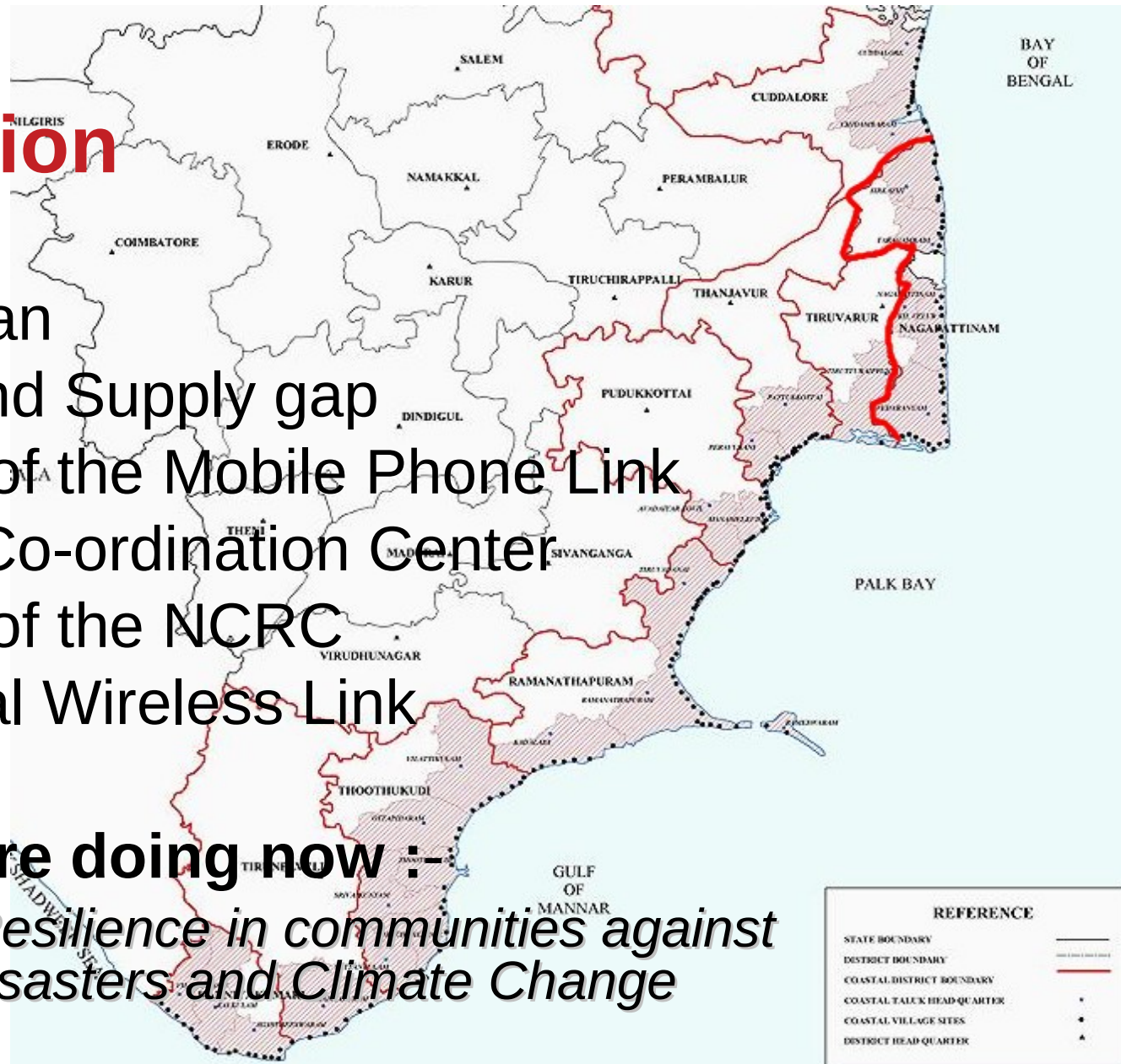
- Member R-10 Execom
- R-10 Humanitarian Technology Coordinator
- Past Chair, Kerala Section, India





# Presentation

- How it began
- Demand and Supply gap
- Setting up of the Mobile Phone Link
- The NGO Co-ordination Center
- Formation of the NCRC
- The Coastal Wireless Link
- **What we are doing now :-**
  - *Building Resilience in communities against Natural Disasters and Climate Change*







# The Tragedy

## 26<sup>th</sup> December 2004





# Shocked !

- 6600 dead (Official)
- 33,000 homes destroyed
- 88 Villages affected
- Property damage estimated at 7,000 million
- Fishing community affected most



# The Relief Phase

# A flood of help

- Indians and the world poured in their heart out.
  - This had to be seen to be believed
- People came out in thousands to help
  - Doctors, Engineers, Social Workers and everyone
  - Some traveled thousands of Km to reach Nagai
  - Indian NGOs were first at the spot
- Complete harmony
  - Survivors stay with other unaffected people, in temples and theaters and marriage halls.
  - No law and order problems (No looting or theft)

# Starting Relief Efforts

- A small group with including members of IEEE, decide to go to Nagapattinam from Kerala (500 kms away).
- Nagapattinam was the worst affected District on the Mainland India.
- By 29th, the rescue work was over and the bodies were being buried
- The relief phase started by the 30<sup>th</sup>
- The District Administration called a meeting of the NGOs to co-ordinate their activities with the Government
- We attended the meeting



# NGO Co-ordination Centre

- The need for co-ordination between NGOs was felt for effective relief efforts
- We volunteered to set up the co-ordination Centre
- The Centre was set up in the lawns of the district office
- This became the meeting point of a lot of NGOs, International NGOs
- A website was created on the relief efforts.
- Became the reference site for donors.



## NGO Co-ordination Centre



# Supply Driven Relief

- All kinds of materials started flowing in.
  - Clothes, Cooked Food, Tents, Medicines
  - Air Force flew in survival rations
  - 70,000 liters of packaged water arrived
  
- This created an interesting scenario
  - Mountains of clothes
  - Hotels in the area did not cook food for two days
  - Wrong medicines
    - Cant prescribe paracetamol for stomach pain !
  
- Need was totally different
  - Underclothes!
  - Uncooked grains, Cooking utensils, Stoves
  - Right Medicines at the right place and time
  - Nobody's need were satisfied...
  - Excess relief material was being disposed off....







# Something had to be done!



# ICT Intervention

- Getting to know the Requirements
  - 100 Mobile Phones donated
  - 72 Volunteers start sending requirements from villages.
- Getting to know the Suppliers
  - NGO requested to register with capabilities
  - Matching of Requirements to Suppliers
  - Help Desk established in the District Offices
  - Global donors use website to understand requirements
- Government Help
  - Government decides to move relief materials as per requirements gathered from villages.
  - Government godown and logistics controlled by us!



## Help-desk and Logistics Centre – January 5<sup>th</sup> 2005

### Internet Access through wireless broadband



# Demand Driven Relief

- Villages needs gathered by volunteers
- Sent through mobile phones to District Offices
- Requirements and Availability compared
- Requirements available on web-site
- NGOs contact and contacted by NGO Coordination Centre
- Relief logistics planned and arranged
- Not perfect but on the whole a better system

A Villager said: *Tell the 'computer people' what you want and you will get it !*



# The Rehabilitation Phase

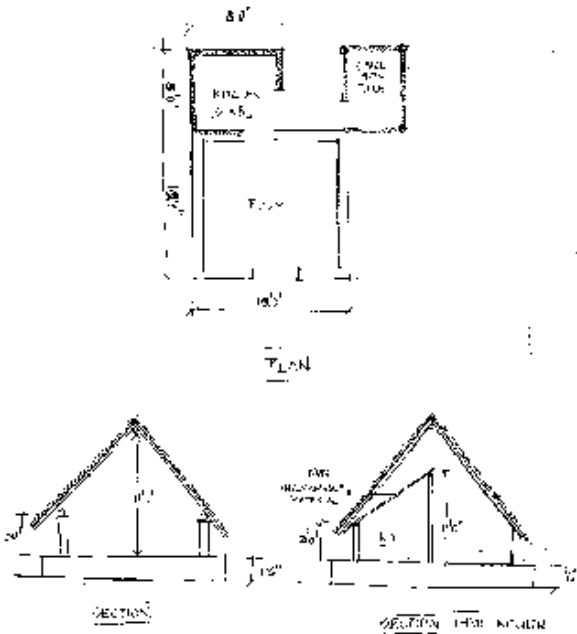
# Formation of NCRC

- NGO Co-ordination and Resource Centre
  - SIFFS and SNEHA
  - Later UN support through UNDP
  - Aim to continue co-ordination of relief activities into the rehabilitation phase.
  - Use of ICT to be expanded
- Setting up of the Wifi Link along the coast
  - Enabling communities to interact with Government
  - Monitoring of reconstruction
  - Interventions for the marginal and underprivileged

# The Rehabilitation

- Database of each affected Individual created
- Government orders and promises recorded
- The rehabilitation materials in cash and kind given were documented in the database
- Government and NGO were given constant feedback on the status of rehabilitation measures, Village and Hamlet wise
- Cases of exclusion of weaker sections highlighted – Orphans, Widows, Dalits, Others (Child Secretariate)

# Temporary Shelters



Thousands came up along the coast



# The Nagai Link



# Linked up

## ■ Nagai Link

- Length 117 Kms along coast
- Village Information Centres set up at link nodes
- Two way information interchange
  - Government orders and information about assistance
  - Communications to NGOs from Government
  - Best Practices in house construction
  - Citizens grievance to the Government
  - Information about aid and assistance distribution
  - Rehabilitation Construction monitoring
- Two way video conferencing to link communities with communities and with the Government



# Recognition

- UN supports efforts: UNDP supports NCRC and join in the steering committee as a permanent member
- UN Ambassador for the Indian Ocean Tsunami and former US President Mr. Clinton visits Nagapattinam and hails – Public ~ Private partnership in disaster Management
- The Government and People support NCRC making it difficult to close it down after three years.



# **B E D R O C**

## **Building and Enhancing Disaster Resilience of Coastal Communities**

### **Interventions in Disaster Resilience and Climate Change**

**Main modus will be to**

- **Incubate new methods using modern technology**
- **Demonstrate them and make them useful for the community**
- **Hand them over to Government and NGOs for implementation**
- **Monitor the implementation**



# BEDROC – What we are doing now

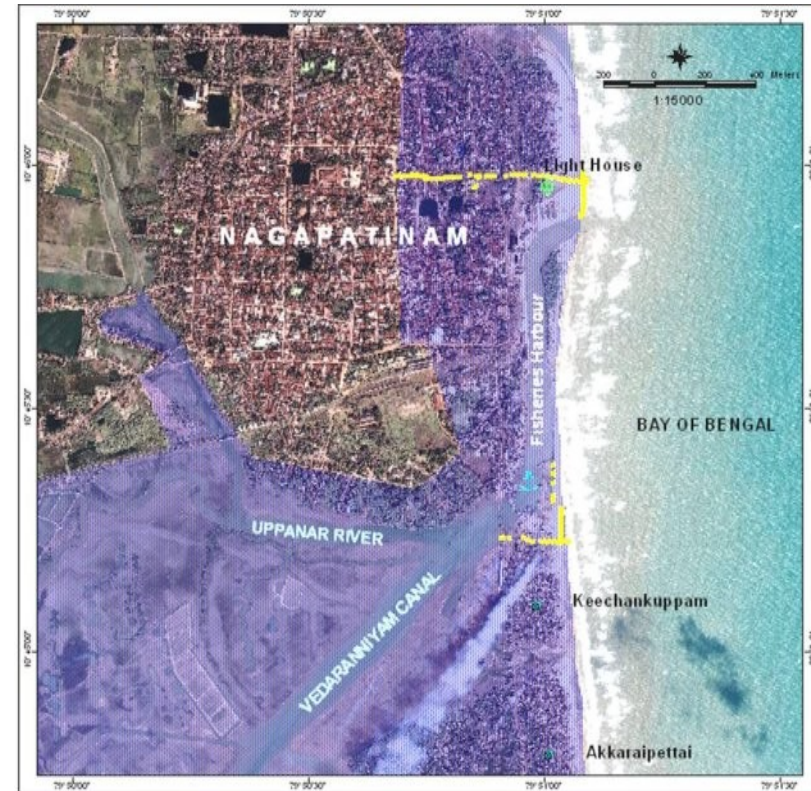
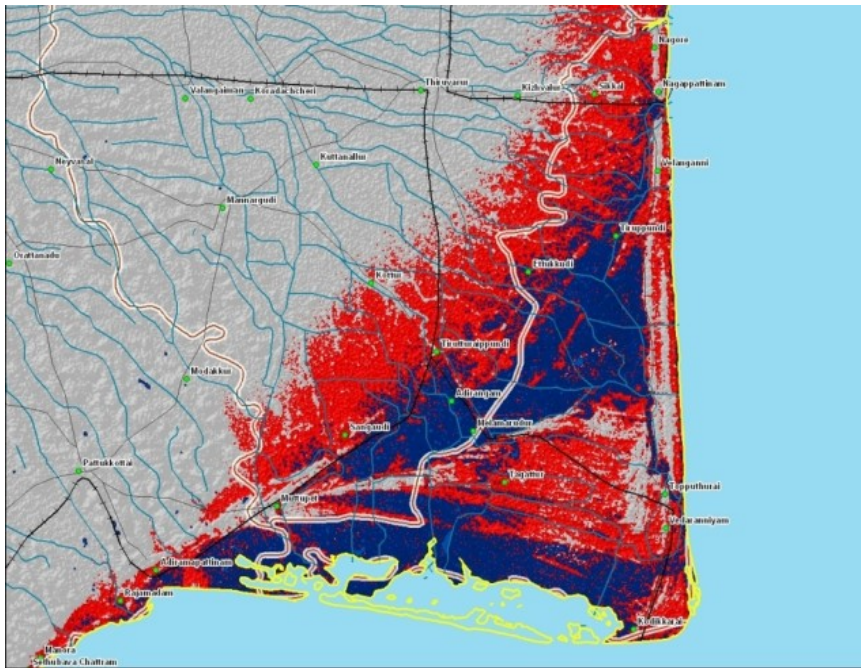
- After three years, NCRC was finally shut down
- Main Work
  - Mapping natural water drainage channels and low lying areas to prevent flooding
    - Using satellite imagery and GIS
    - Total Station Mapping
  - Community Radio and early warning system
  - Increasing community networking
  - On-line grievance redressal through Video with District officials.
  - Increasing income through livelihood interventions

# Climate Change & Disaster Preparedness

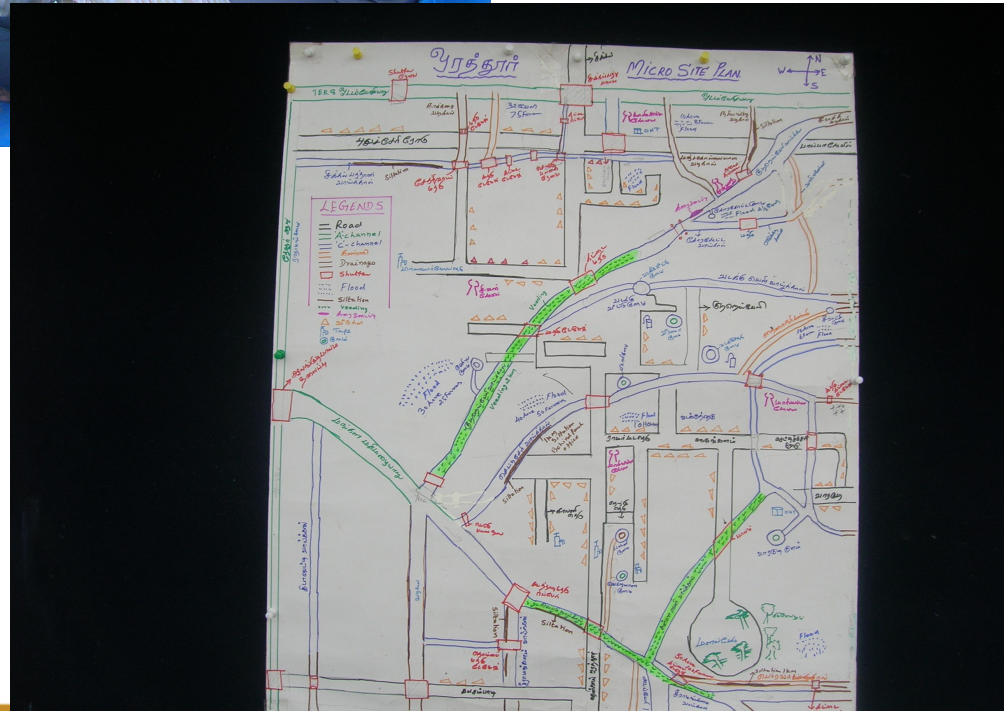
- Water Users Association Registered
- Use of Technology in Climate Change Work
- Satellite Maps of disaster prone areas
- Sensitizing the community on Disaster Preparedness
- Mapping of natural water flow channels
- Peoples Participation to increase Sustainability
- Village maps prepared by hand

# Satellite Maps

- Mapping of areas that will be affected by Flooding and Climate Change









**BEDROC**

**INCUBATING INITIATIVES**





# IEEE Kerala – Other Projects

- Intervention in Information Technology Initiatives of Govt – Member of IT Mission and active participation
- SPACE – Society for Promotion of Alternative Computing setup with Government Participation
- Insight – Low Cost Computing for the Visually Challenged
- Video Conferencing between the psychiatrists and the orphanages for round the clock help for the orphans.