

# DISASTER MANAGEMENT: KEY CONCERNS & PREVENTION MEASURES

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## INTRODUCTION

- INDIA HAS BEEN TRADITIONALLY VULNERABLE TO NATURAL DISASTERS ON ACCOUNT OF ITS UNIQUE GEO-CLIMATIC CONDITIONS.
- FLOODS, DROUGHTS, CYCLONES, EARTHQUAKES AND LANDSLIDES HAVE BEEN RECURRENT PHENOMENA.
- AT TIMES, THE SAME AREA IS SUBJECTED TO FLOODS AND DROUGHT SITUATION IN SUCCESSIVE SEASONS OR YEARS.
- WHILE NOT ALL NATURAL CALAMITIES CAN BE PREDICTED AND PREVENTED, A STATE OF PREPAREDNESS AND ABILITY TO RESPOND QUICKLY TO A NATURAL CALAMITY CAN CONSIDERABLY MITIGATE LOSS OF LIFE AND PROPERTY AND THE HUMAN SUFFERING AND RESTORE NORMALCY AT THE EARLIEST.
- IT IS, THEREFORE, OF PARAMOUNT IMPORTANCE THAT A PLAN OF ACTION FOR DEALING WITH CONTINGENCIES THAT ARISE IN THE WAKE OF NATURAL CALAMITIES IS FORMULATED AND PERIODICALLY UPDATED.
- THE DESTRUCTIONS CAUSED BY NATURAL DISASTERS ARE SEVERAL TIMES GREATER THAN THOSE CAUSED BY MAN-MADE DISASTERS.
- "THE SMALLEST AND POOREST COUNTRIES ARE AFFECTED MORE SEVERELY BY NATURAL DISASTERS AND THE POOREST AND MOST DISADVANTAGED MEMBERS OF A DISASTER AFFECTED COMMUNITY ARE LIKELY TO EXPERIENCE THE MORE SERIOUS CONSEQUENCES". (UNDRO- 1984)

## CLIMATE CHANGE AND DISASTERS: INTERLINKAGE

- CLIMATE CHANGE AND NATURAL DISASTERS SHOULD BE DEALT TOGETHER AND NOT SEPARATELY.
- WITH RAPID DEVELOPMENT OF COASTAL AREAS, INDUSTRIALIZATION AND URBANIZATION, POPULATIONS AT LARGE ARE BECOMING VULNERABLE TO CLIMATE-ASSOCIATED CALAMITIES AND MANY HAVE NO CHOICE BUT TO MIGRATE TO SAFER PLACES.
- IT IS ESTIMATED THAT APPROXIMATELY 142 MILLION PEOPLE MAY INHABIT COASTAL INDIA IN 2050 AND INDIA'S TOTAL NUMBER OF FLOOD ZONE REFUGEES ALONE COULD BE ANYWHERE BETWEEN 20 AND 60 MILLION (MYERS, 1993).
- NEARLY 700 MILLION RURAL PEOPLE IN INDIA DIRECTLY DEPEND ON CLIMATE-SENSITIVE SECTORS AND NATURAL RESOURCES FOR THEIR SUBSISTENCE AND LIVELIHOOD.
- UNDER CHANGING CLIMATE, FOOD SECURITY OF THE COUNTRY MIGHT COME UNDER THREAT. IN ADDITION, THE ADAPTIVE CAPACITY OF DRY-LAND FARMERS, FOREST AND COASTAL COMMUNITIES IS LOW.
- CLIMATE CHANGE IS LIKELY TO IMPACT ALL THE NATURAL ECOSYSTEMS AS WELL AS HEALTH (E.G. MALARIA) AND SOCIO-ECONOMIC SYSTEMS, AS SHOWN BY THE INDIA'S INITIAL NATIONAL COMMUNICATION TO THE UNFCCC

## POST-KYOTO PROTOCOL CLIMATE CHANGE MITIGATION REGIME

- POST-KYOTO PROTOCOL CLIMATE CHANGE MITIGATION REGIME MUST DO THE FOLLOWING:
  1. PROVIDE TECHNOLOGY TRANSFER AND CAPACITY BUILDING TO DEVELOPING/UNDER-DEVELOPED COUNTRIES.
  2. COAL, ONCE DISMISSED AS 19TH AND 20TH CENTURY FUEL, IS GOING TO ASSUME IMPORTANCE ONCE AGAIN AS OIL AND GAS RESERVES ARE REACHING THEIR LIMITS. FINDING WAYS TO USE COAL EFFECTIVELY BUT SAFELY IS ONE OF THE BIGGEST CHALLENGES. ISSUES RELATED TO CARBON CAPTURING OR SEQUESTRATION HAS NEVER BEEN CONSIDERED, EVEN IN MAJOR COAL-GUZZLING POWER COMPANIES.
  3. TARIFFS PLACED ON CLEAN ENERGY TECHNOLOGIES SHOULD BE REDUCED OR ELIMINATED AND THE HARMONIZED COMMODITY DESCRIPTION AND CODING SYSTEM SHOULD BE UPDATED TO COMBINE ALL CLIMATE CHANGE TECHNOLOGIES IN THE SAME CATEGORY.
  4. DEVELOP A POST-KYOTO AGREEMENT THAT INCORPORATES ALL THE COUNTRIES OF THE WORLD. HOWEVER, THEIR COMMITMENT TO REDUCE THE GHG EMISSION MAY BE BASED ON THEIR CAPACITY.
  5. THE POST-KYOTO AGREEMENT SHOULD BE QUANTIFIABLE AND LONG-TERM, PREFERABLY CREATING A PATHWAY FOR THE NEXT 50 YEARS. THIS WILL LOWER UNCERTAINTY AND ALLOW FOR LONGER-TERM PROJECTS TO BE UNDERTAKEN.

## KEY CONCERNS OF DISASTER MANAGEMENT

- LACK OF SERIOUSNESS ABOUT THE ISSUE
- IN SUNDARBANS SPRING TIDES OCCUR EVERY FORTNIGHT DURING NEW MOON OR FULL MOON. ON JUNE 6, 2009 TIDAL WAVES LASHED CHUNAKHALI AND KUMIRMARI ISLANDS, ALREADY SWAMPED BY CYCLONE ALTA THAT STRUCK ON MAY 25 2009. NO GOVERNMENT OFFICIAL COULD BE SPOTTED IN THESE TWO ISLANDS. REPEATED PHONE CALLS TO ENGINEERS OF THE STATE IRRIGATION DEPARTMENT BY THE VILLAGERS WENT UNANSWERED. BARUN PRAMANIK, PANCHAYAT PRADHAN OF SAMBHUNAGAR VILLAGE, SAID: "THE ENGINEERS ASSURED US THEY WOULD REPAIR THE EMBANKMENTS, BUT THEY LEFT HALFWAY AS THE CONTRACTORS REFUSED TO WORK BECAUSE OF THE LOW PAYMENT. THIS CREATED CONFUSION AND VALUABLE TIME WAS LOST. HAD THEY TOLD US IN THE BEGINNING, THEN WE WOULD HAVE GOT MORE TIME TO SAVE OURSELVES".
- LACK OF STRATEGIC DIRECTION
- IN OCTOBER 1999, COASTAL REGIONS OF ORISSA STATE IN INDIA WERE HIT BY A KILLER CYCLONE, TAKING THOUSANDS OF LIVES AND LEAVING MILLIONS SHELTERLESS. THE GOVERNMENT AGENCIES RESPONSIBLE FOR FORECASTING PROBABLY DID THEIR JOB WELL BUT THE NEWS ABOUT THE MAGNITUDE OF THE EXPECTED CYCLONE WAS NOT CONVEYED CLEARLY AND STRONGLY ENOUGH. RELYING ON THEIR PREVIOUS EXPERIENCE OF "UNRELIABLE" NEWS FORECASTING OF IMMINENT CYCLONES, MOST OF THE FAMILIES DID NOT REALIZE THE SERIOUSNESS OF THE SITUATION. THE LACK OF RESPONSIVE ACTION RESULTED IN DEATHS, WHICH COULD HAVE BEEN AVOIDED (JAIN, 2001)

## CONTD...

- MISMANAGEMENT OF FUNDS
- THE COMPTROLLER AND AUDITOR GENERAL (CAG) OF INDIA BROUGHT OUT A PERFORMANCE AUDIT OF MAHARASHTRA'S FLOOD PREPAREDNESS AND RESPONSE FOR THE 2005 AND 2006 FLOODS (TIMES NEWS NETWORK, 2007). A GLARING PART OF THE REPORT INVOLVES THE NON-UTILISATION OF FUNDS. OF RS 11.6 CRORE SANCTIONED IN AUGUST AND DECEMBER 2005 FOR REPAIRING DAMAGED CIVIC AND PUBLIC UTILITIES, RS10.49 CRORE WERE NOT UTILISED IN MAY 2006, EVEN THOUGH THE AGENCIES WERE TO UTILISE THE FUNDS BY MARCH 2006. "AS A RESULT, REPAIR WORKS COULD NOT BE TAKEN UP FOR FOUR TO EIGHT MONTHS, DEPRIVING THE FLOOD-AFFECTED PEOPLE FROM THE INTENDED BENEFITS," (TIMES NEWS NETWORK, 2007).
- LACK OF COORDINATION OF DIFFERENT SERVICES AND DEPARTMENTS
- IN 2008, THE MAJOR FLOOD IN ASSAM'S LAKHIMPUR DISTRICT WAS CAUSED BY THE RELEASE OF EXCESS WATER BY NORTH EASTERN ELECTRIC POWER CORPORATION (NEEPCO) IN NEIGHBOURING ARUNACHAL PRADESH. THERE WERE NO WARNINGS TILL THE DAMAGE WAS ALREADY DONE. WHEREAS IT WAS A CLEAR EXAMPLE OF LACK OF CO-ORDINATION WITHIN INDIA, THERE WERE INSTANCES IN WHICH CHINESE FLOOD WARNING FROM ACROSS THE BORDER COULD HELP THE MOST.

## CONTD...

- **LACK OF PLANNING AND IMPLEMENTATION**
- DUE TO LACK OF PLANNING AND IMPLEMENTATION, THE TIMELY HELP THAT POURED IN FROM ALL OVER THE WORLD COULD NOT BE UTILIZED PROPERLY AND IN TIME. THE EMERGENCY MEDICAL SERVICES (EMS) SYSTEMS THOUGH ARE EXISTING IN SOME METROPOLITAN CITIES ARE ILL ORGANIZED AND WEAK AS IS EVIDENT FROM PAST EXPERIENCES OF MASS CASUALTIES OF BOMB BLASTS (BSE – MUMBAI), EARTHQUAKES (MAHARASHTRA & GUJARAT) AND COMMUNAL VIOLENCE (GUJARAT). (MADHUSUDANAN, 2002)

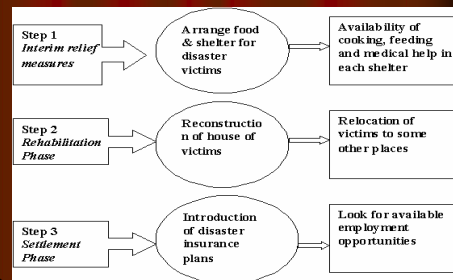
## DISASTER PREVENTION MEASURES

- A. MEASURES TO ENSURE CLEAN AND SUSTAINABLE DEVELOPMENT: ADDRESSING THE PROBLEM OF CLIMATE CHANGE
- MITIGATION
  - ADAPTATION
  - THE KYOTO-PROTOCOL PROVISIONS ON ADAPTATION ARE
  - 1. ALL PARTIES REQUIRED TO DEVELOP PROGRAMMES TO MITIGATE AND ADAPT TO CLIMATE CHANGE
  - 2. PROVIDES FOR FUNDING OF, *INTER ALIA*, ADAPTATION MEASURES, ENTRUSTED IN GEF.
  - THERE IS A NEED TO DEVELOP PREDICABLE AND SUBSTANTIAL ADDITIONAL RESOURCES OF FUNDING FOR ADAPTATION RESPONSES IN DEVELOPING COUNTRIES. FOR EXAMPLE
  - LEVIES ON VEHICLE THAT PRODUCE HIGH LEVEL OF CO<sub>2</sub>, AS WELL AS ON OTHER LOW FUEL EFFICIENCY VEHICLES
  - COMMITMENT FROM COUNTRIES TO ALLOCATE CERTAIN PERCENTAGE OF THEIR GDP TO CLIMATE ADAPTATION FINANCING.
  - INTEGRATE CLIMATE CHANGE ADAPTATION OBJECTIVES INTO OVERSEAS DEVELOPMENT ASSISTANCE (ODA) PROJECTS BECAUSE UNDP STUDY INDICATES THAT 17% OF ALL DEVELOPMENT ASSISTANCE PROJECTS ARE AT INTENSIVE RISK FROM CLIMATE CHANGE
  - INTEGRATE ADAPTATION INTO FOREIGN DIRECT INVESTMENT (FDI): example - CLIMATE RISK CAN BE REDUCED IF BUILDING CODES AND LAND USED REGULATION FOR REAL ESTATE REFLECT BEST PRACTICES FOR REDUCING VULNERABILITY TO CLIMATE CHANGE IMPACTS
  - CRITICAL NEEDS RESEARCH FOR DEVELOPING ADAPTATION STRATEGY

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- B. MEASURES TO DEAL WITH THE DISASTERS
- INFRASTRUCTURE DEVELOPMENT
  - AN EXAMPLE OF LACK OF INFRASTRUCTURE DEVELOPMENT IS THE WELL KNOWN KOSI SAGA OF 2008. THE SUDDEN DIVERSION OF THE KOSI RIVERS COURSE IN SEPTEMBER 2008 HAS INUNDATED HUGE TRACKS OF FEW DISTRICTS. TRADITIONALLY NON-FLOODED POCKETS OF BIHAR'S ANNUAL MONSOON FURY.
  - INSTITUTIONAL ARRANGEMENT
  - AREAS WHERE IMPROVEMENT IS URGENTLY NEEDED ARE:
  - A. INTEGRATED PLANNING FOR DISASTERS
  - B. SETTING UP OF A MODERN, PERMANENT NATIONAL COMMAND CENTRE OR OPERATIONS ROOM
  - C. ESTABLISHMENT OF A NATIONAL STAND BY, QUICK REACTION TEAM COMPOSED OF EXPERIENCED PROFESSIONALS
  - D. CREATION OF URBAN SEARCH AND RESCUE CAPACITY AT ALL LEVELS
  - E. MEDIA POLICY GEARED TO HANDLING THE GROWING PHENOMENON OF REAL TIME TELEVISION REPORTING
  - F. CLOSER INTERFACE WITH AND BETTER UNDERSTANDING OF THE INTERNATIONAL SYSTEM FOR DISASTER RESPONSE AND PUTTING IN PLACE, SYSTEMS FOR DEALING WITH INTERNATIONAL ASSISTANCE ONCE IT COMES
  - G. MODERN UNIFIED LEGISLATION FOR DISASTER MANAGEMENT
  - EDUCATION AND TRAINING ON DISASTER MANAGEMENT
  - NETWORKING POLICY MAKERS, REPRESENTATIVES OF VARIOUS GOVERNMENT BODIES, NON GOVERNMENTAL ORGANIZATIONS (NGO'S) AND INTERNATIONAL VOLUNTARY ORGANIZATIONS

## POST-DISASTER MEASURES



## CONTD...

- STEP 1: INTERIM RELIEF MEASURE
- A. ARRANGE FOOD AND SHELTER FOR VICTIMS OF DISASTER
- THE FIRST & FOREMOST RESPONSIBILITY OF GOVERNMENT IS TO MAKE ARRANGEMENTS OF THE FOOD AND SHELTER FOR THE SUFFERERS AND IT SHOULD ENSURE THAT
  - 1. THERE ARE ADEQUATE AMOUNTS OF SAFE DRINKING WATER, BASIC SANITATION FACILITIES, DISPOSAL OF EXCRETA, WASTE WATER AND SOLID WASTES AND ADEQUATE SHELTER
  - 2. PROVIDE FOOD PROTECTION MEASURES, ESTABLISHING OR CONTINUING VECTOR CONTROL MEASURES, AND PROMOTING PERSONAL HYGIENE
  - B. AVAILABILITY OF COOKING, FEEDING AND MEDICAL HELP IN EACH SHELTER
  - IN ADDITION TO PROVIDING COOKING AND FEEDING FACILITIES, THE LOCAL HEALTH PERSONNEL SHOULD PREPARE PERIODIC REPORTS SUMMARIZING FROM THE FOLLOWING ISSUES:
  - 1. THE COMPOSITION OF THE COMMUNITY
  - 2. THE NUMBER AND TYPE OF HEALTH PERSONNEL AVAILABLE
  - 3. THE CAUSES OF DEATH
  - 4. THE CASES THAT COULD NOT BE DEALT WITH ON THE SPOT
  - 5. THE ESTABLISHMENTS TO WHICH PEOPLE HAVE BEEN EVACUATED
  - 6. THE SYMPTOMS AND DISEASES SEEN BY THE LOCAL HEALTH TEAM
  - 7. THE PROGRAMS AND ACTIVITIES UNDER WAY

## CONTD...

### STEP 2: REHABILITATION PHASE

- A. RECONSTRUCTION OF HOUSE OF VICTIMS, IF POSSIBLE
- B. RELOCATION OF VICTIMS TO SOME OTHER PLACES

### STEP 3: SETTLEMENT PHASE

- A. INTRODUCTION OF DISASTER INSURANCE PLANS: PLANS SHOULD BE MADE IN ADVANCE FOR 'DISASTER INSURANCE' IN AREAS, WHERE NATURAL DISASTERS ARE VERY COMMON.
- B. LOOK FOR AVAILABLE EMPLOYMENT OPPORTUNITIES

## CONCLUSION

- NATURAL HAZARDS ARE PURELY NATURAL BUT CLIMATE CHANGE MAY INCREASE ITS MAGNITUDE.
- SUCH CALAMITIES IMPART LESSONS AT A VERY HIGH COST OF LIFE AND PROPERTY. BUT IF THOSE LESSONS DO NOT LEAD TO LEARNING AND KNOWLEDGE GENERATION THEN IT IS A VERY HEAVY COST TO BEAR.
- THREE KNOWN HUMAN ACTIONS CAN MOVE TOWARDS THE STABILIZATION OF THE COMPOSITION OF THE ATMOSPHERE:  
DECREASING THE USE OF FOSSIL FUELS BY SWITCHING TO RENEWABLE ENERGY RESOURCES, DECREASING OR ELIMINATING DEFORESTATION AND INCREASING RATES OF REFORESTATION
- THE TOPIC OF CLIMATE CHANGE WILL SEE GREAT DEBATE AND RAPID CHANGES IN THINKING OVER THE MONTHS LEADING UP TO THE UNFCCC CONFERENCE IN COPENHAGEN IN DECEMBER 2009.
- BUT IT IS NOT ACTUALLY REQUIRED TO WAIT UNTIL 2010 TO ACT – DISASTER RISK MITIGATION AND PREVENTION STRATEGIES CAN BE IMPLEMENTED IMMEDIATELY IN ORDER TO PROVIDE ADAPTIVE CAPACITY, TO HAVE A SAFER ENVIRONMENT, TO INCREASE RESILIENCE TO FUTURE THREATS, AND TO REDUCE THE EXISTING UNACCEPTABLE AND GROWING LEVELS OF DISASTER RISK.

THANK YOU