



Overview of Disaster Risk Management and Vulnerability



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Introduction

- Zimbabwe is among other countries in the SADC region and the world at large that is vulnerable to a number of hazards both natural and man-made,
- Due to increased volumes of traffic , coupled with the rugged terrain in some parts of the country and narrow roads, the country has lost a number of lives and property due to road traffic accidents,
- The recent years have seen a number of people being left homeless and infrastructural damages due to a dramatic increase in severe climatic and weather conditions caused by climate change,
- Hydro-meteorological disasters such as cyclones, droughts and floods have had direct impact on the poor, incapacitated and marginalised communities of the country

Institutional arrangements

- In Zimbabwe, government commitment in the management of disasters is demonstrated by the existence of the legal enabling statutes, which create the conducive environment for disaster risk reduction initiatives.
- The Government of Zimbabwe committed itself in setting up institutional framework and appropriate policies for Disaster Risk Reduction.

DISASTER MANAGEMENT POLICY STATEMENT IN ZIMBABWE



Broad Policy Statement

- **National Policy for Civil Protection states that “ Every Citizen of Zimbabwe should assist where possible to avert or limit the effects of a disaster”.**
- **Central Government initiates disaster preparedness programmes through the relevant sector ministries with local administration taking the responsibilities for implementing and maintaining its effectiveness.**
- **Sector Specific Policies**

LEGISLATION

Overall coordination.

- The Minister responsible for Local Government Rural and Urban Development is charged with the coordinative role as empowered by the Civil Protection Act No. 5 of 1989. The Act provides for:-
 - Special powers designed to establish, coordinate and direct the activities of both the public and private emergency services
 - Guidelines for action and maximum use of resources since disaster mitigation requires a multisectoral and interdisciplinary approach;

Cont..

- The establishment of a National Civil Protection Fund
- The fund is applied to the development and promotion of Civil Protection activities throughout the country.
- Commandeering of resources for the purpose of mitigating a disaster,
- Declaration of the state of Disaster by the president of Zimbabwe

The Structure of the Civil Protection System in Zimbabwe

President (Head of State)

Parliament (Legislative)

Cabinet (Policy formulation)

1 2 3 4 5 6 7 8 9 10.....

**MLG,R
&UD**

**Sister Ministries/ Departments/
Parastatals**

**UN, NGO, Red C
Representatives**

- **NB: Other members are co opted as and when necessary.**

Civil Protection Organisation in Zimbabwe

CO-ORDINATOR

CO-ORDINATOR/PLANNING COMMITTEE

N Minister – LGR&UD
A +
T Civil Protection Directorate
I Secretariat

National Civil Protection
Committee (NCPC)
with a Multisectoral Representation

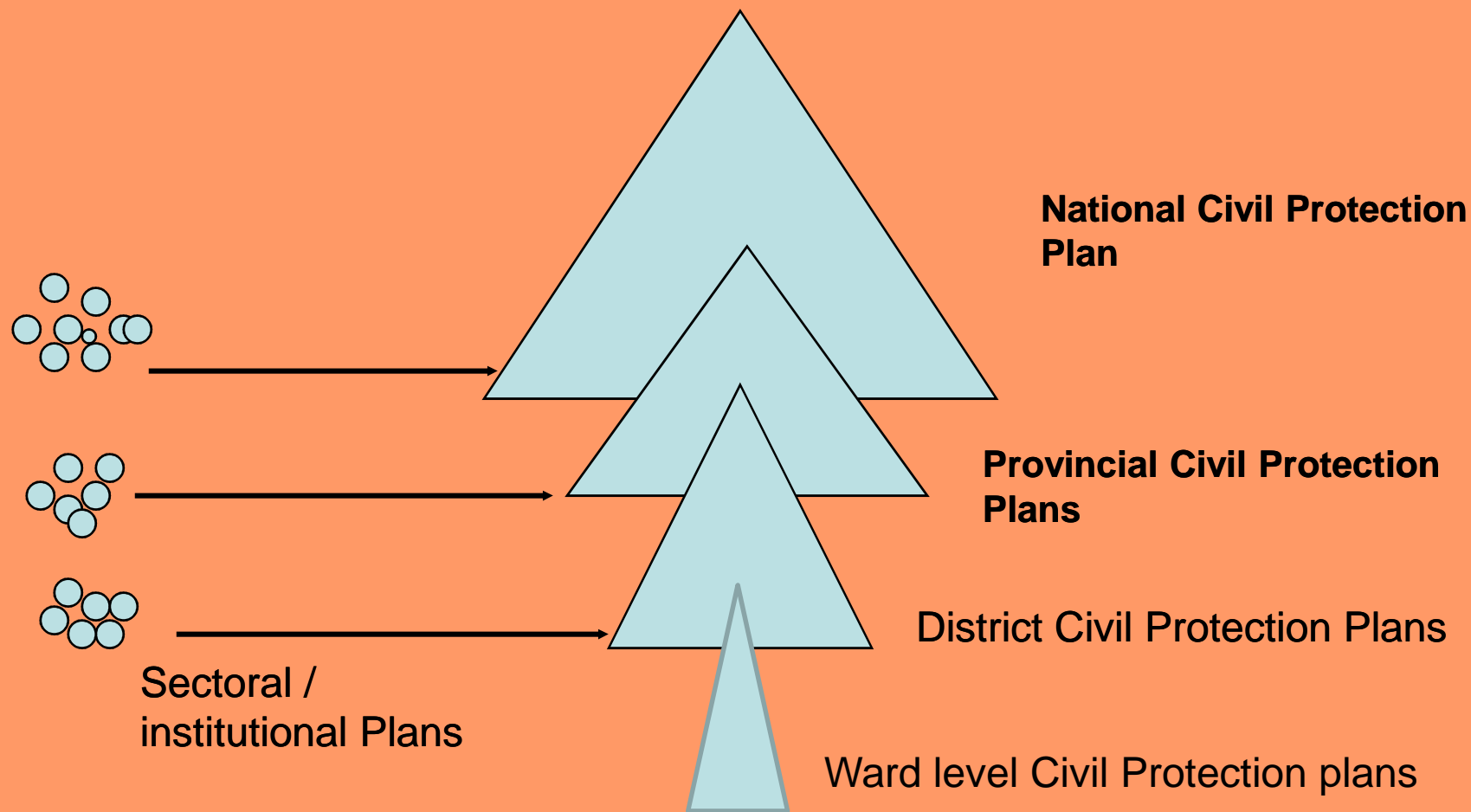
P Provincial Administrator
R MLR&UD
O
V

Provincial Civil Protection
Committee (PCPC)
with a Multisectoral Representation

D District Administrator
I (MLR&UD)
S
T

District Civil Protection
Committee (DCPC)
with a Multisectoral Representation

Levels of Emergency Preparedness Planning in Zimbabwe



Community based DRR



POLICY & LEGISLATION REVIEW

- Draft bill for amending the Civil Protection Act (1989) was developed.
- Draft policy framework for mainstreaming disaster risk reduction in development planning was also developed.
- The drafts are in conformity with International standards, Hyogo Framework of Action (HFA)

Hyogo Framework

- Derived from the Yokohama Strategy and seeks to:
- Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation
- Identify, assess and monitor disaster risks and enhance early warning
- Use knowledge, innovation and education to build a culture of safety and resilience at all levels
- Reduce underlying risk actors
- Strengthen disaster preparedness for effective response at all levels

Disaster risk reduction framework

- Sustainable development underscores risk reduction initiatives
- Risk assessment is critical in determining the requisite institutional arrangements and capacities to reduce risk
- Research and sharing of information are key in reducing risk
- Application of risk reduction measures through prevention, mitigation and preparedness must be integrated at all levels i.e. national, sub national and community levels
- Sustainability must seek to address large scale disaster events in much the same way as common small scale events

DISASTER RISK PROFILE AND VULNERABILITIES

Hazard and Vulnerability

- A **hazard** is potentially damaging physical event, phenomenon or human activity that could cause loss of life or injury, property or environmental damage.
- **Vulnerability** - The conditions determined by physical, social, economic, environmental factors which increase susceptibility of a community to the impact of hazards.
- Vulnerability factors are characteristics of the environment, individual and society.



Vulnerability cont'

Conditions which increase susceptibility of a community to the adverse impact of hazards. These are:

- ❖ **Physical**
- ❖ **Social**
- ❖ **Economic**
- ❖ **Environmental/ecological**
- ❖ **Cultural/religious**
- ❖ **Political/ideological**
- ❖ **Technological**
- ❖ **Educational**
- ❖ **Institutional/organizational**

Capacity

- **Combination of strengths, resources, skills, or knowledge available within an individual, community, society, organization or country to reduce illness, disability or death from hazards and promoting health, safety and security**

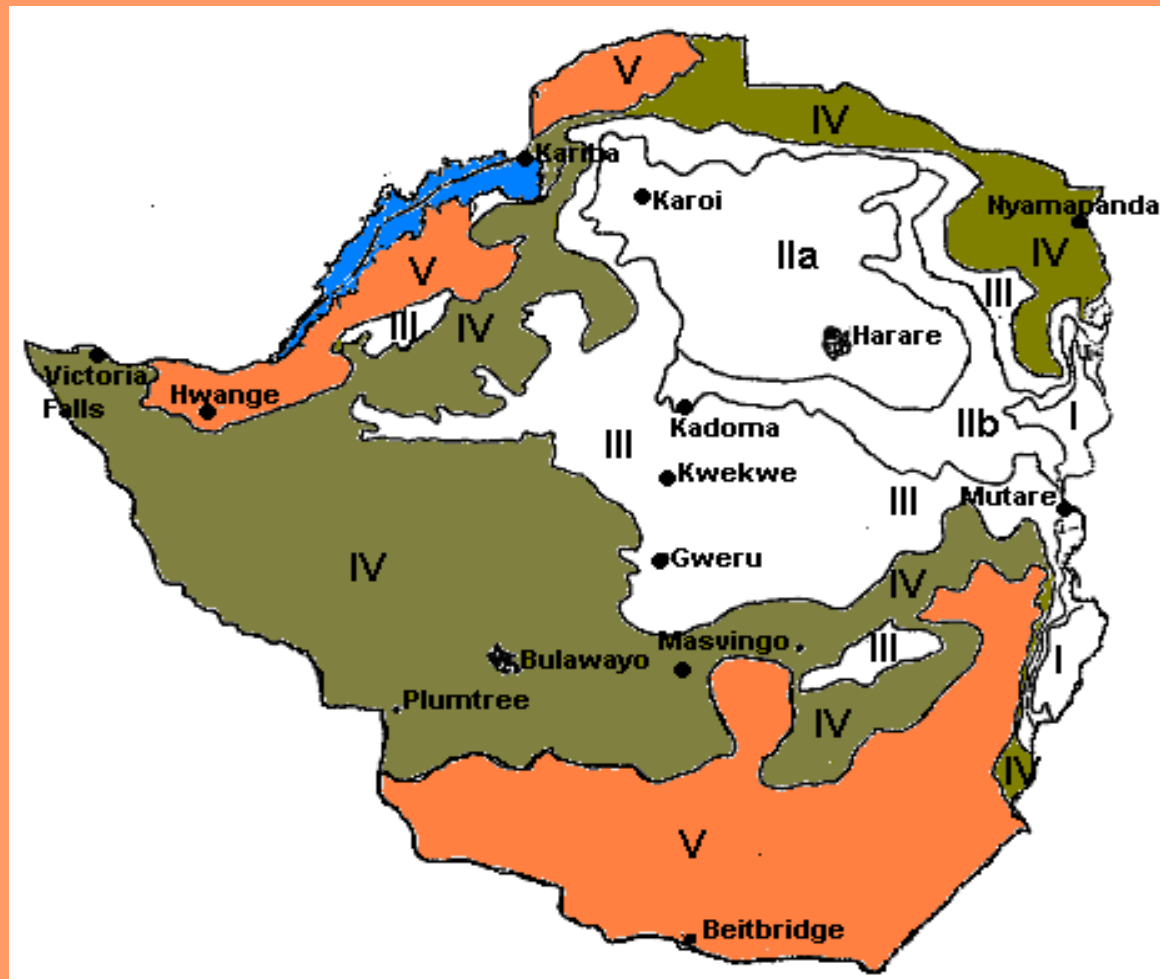
Droughts

- Agriculture is a vulnerable sector in terms of climate related hazards.
- This is exacerbated by the country's strong dependency on rain fed agriculture
- The ability to forecast drought occurrence will help to protect the agricultural economy and ensure reliable production by facilitating the use of appropriate adaptation and mitigation strategies.

Vulnerability

- Periodic droughts have a significant impact on crops, livestock and livelihoods of communities and the nation at large.
- Droughts can also be nation wide disaster eg, 1982/83, 1991/92.
- More extreme in ecological regions 4 and 5

Ecological zones



Areas which are usually termed drought prone areas are found in regions IV and V (colored). (Climate Handbook of Zimbabwe)

Ten driest rainfall seasons - Zimbabwe

Season	Total Seasonal Rainfall	Percentage of Normal
1991/92	335.2	51.6
1946/47	365.2	56.2
1972/73	371.1	57.1
1921/22	385	59.2
1915/16	394.3	60.7
1923/24	399	61.4
1982/83	403.1	62.0
1967/68	404.8	62.3
1994/95	418.8	64.4
1986/87	422.4	65.0

MONDAY 25 JANUARY 2010, Harare, Zimbabwe
Feature

The Herald



WRITE OFF . . . *The Mutamba family of Zvitokwe village, Shamva, watch as their cattle graze their wilting maize crop last week. Such scenes are now commonplace in various parts of the country.*

Capacity

Early warning systems are in place;

- Met Office, NEWU, FEWSNET and Drought Monitoring Centre (DMC)

AGRITEX and Cooperating partners (Mitigation Methods) FAO, NGOs

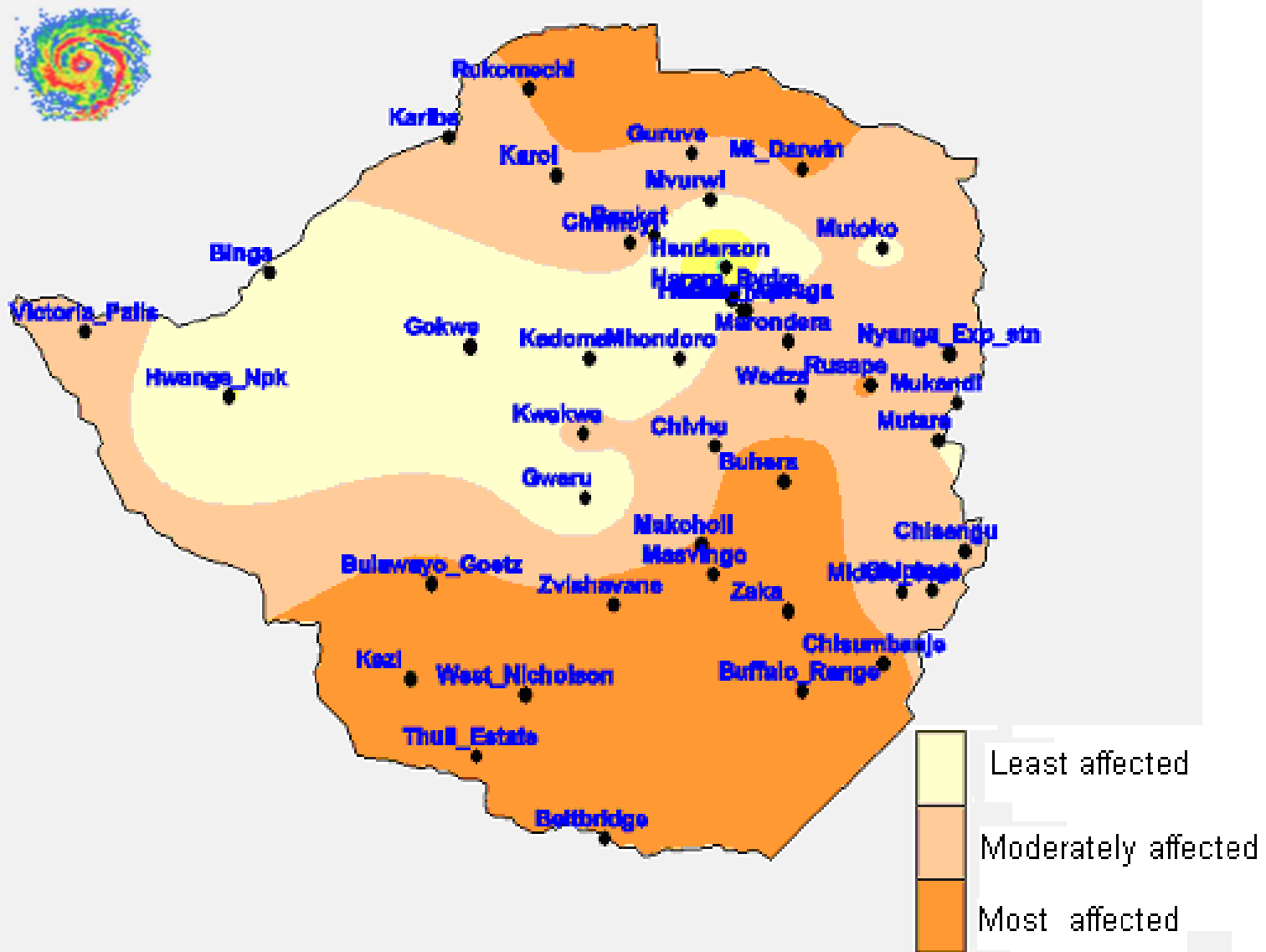
- Drought resistant crops
- Grazing schemes
- Drought relief programmes
- Irrigation
- Water harvesting
- Moisture conservation measures

Tropical Cyclones

Vulnerability

- These cyclones enter Zimbabwe mainly through the South- Eastern and to a lesser extend the North Eastern part of the country as shown on the map.
- They cause a lot of damage to people's livelihoods and infrastructure.
- They are more prevalent in the month of February in Zimbabwe.

CYCLONE PRONE AREAS



(MET OFFICE)

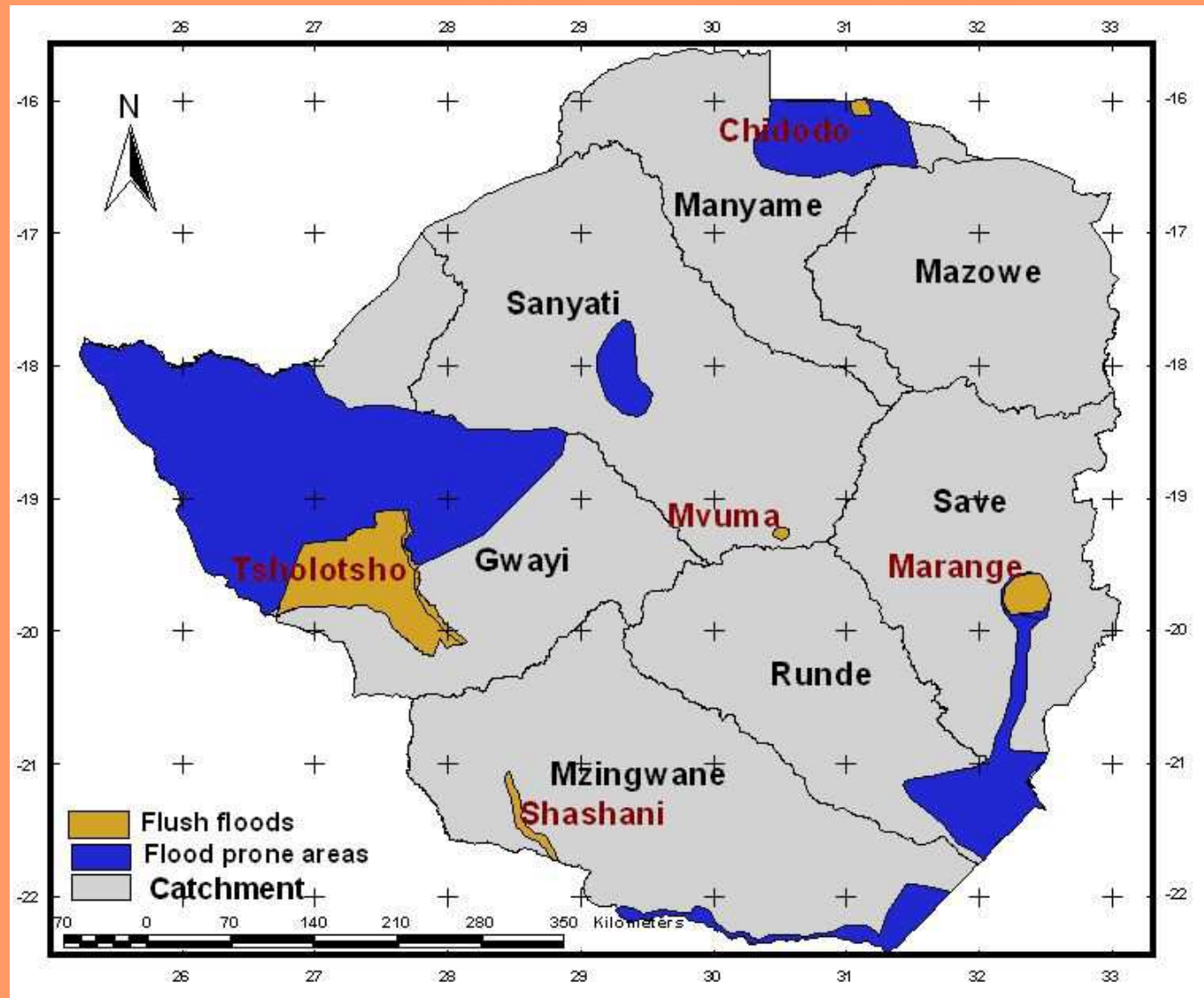
Capacity

- The existence of an early warning mechanism involving the Meteorological Services Department and the Civil Protection organisation in Zimbabwe,

FLOODS



Flood Prone Areas in Zimbabwe



Vulnerability

- In Zimbabwe, societal vulnerability is a function of location of communities in relation to river systems, terrain configuration and type of building structures,
 - Middle Sabi,
 - Muzarabani.
 - Tsholotsho
 - Mushumbi pools
 - Chikwalakwala
 - Tuli-Shashe
 - Gokwe, Down stream of major, medium and small dams

Capacity

- Capacity can be viewed as institutional capacity, policy capacity, community capacity, preparedness capacity (prevention, mitigation (anticipation, forecasting, monitoring)), response and rehabilitation or recovery.

Institutional capacity

- Zimbabwe National Water Authority (ZINWA) Hydrological Section is one major partner in the flood early warning system in conjunction with the Meteorological Services Department and Civil Protection.
- ZINWA monitors river flows in the whole country, and with the aid of MET forecasts, predict the state of hydrology, however real time data is still largely lacking.
- Regular awareness campaigns in flood prone areas

Community capacity

- Local (affected) communities have an important role to play in flood mitigation, early warning and response .
- They are always the first to respond to disasters
- They use their coping strategies (Indigenous Knowledge Systems) as initial early warning.

Thunderstorms and Lightning

Hazard	Vulnerability	Capacity
Lightning	<p>Of all the districts, Gutu, leads with approximately 10 fatalities per annum</p> <p>Binga, Marondera and Rusape follow a long way behind with 3 to 4 per annum.</p> <p>The rest have 1 to 2 casualties or fatalities per annum</p>	<p>Very difficult to forecast exact areas which are going to be struck</p> <p>Can only give areas which are prone to lightning strikes</p> <p>Can advise on objects favoured by lightning strikes</p> <p>Mitigation</p> <p>ZESA, CPO can educate the communities on importance of installing lightning conductors</p> <p>Assessment: ZRP</p>

Storms & Hailstorm damage



12/15/2011

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Hailstorm damage

- Hundreds of hectares of tobacco and other crops are destroyed every year

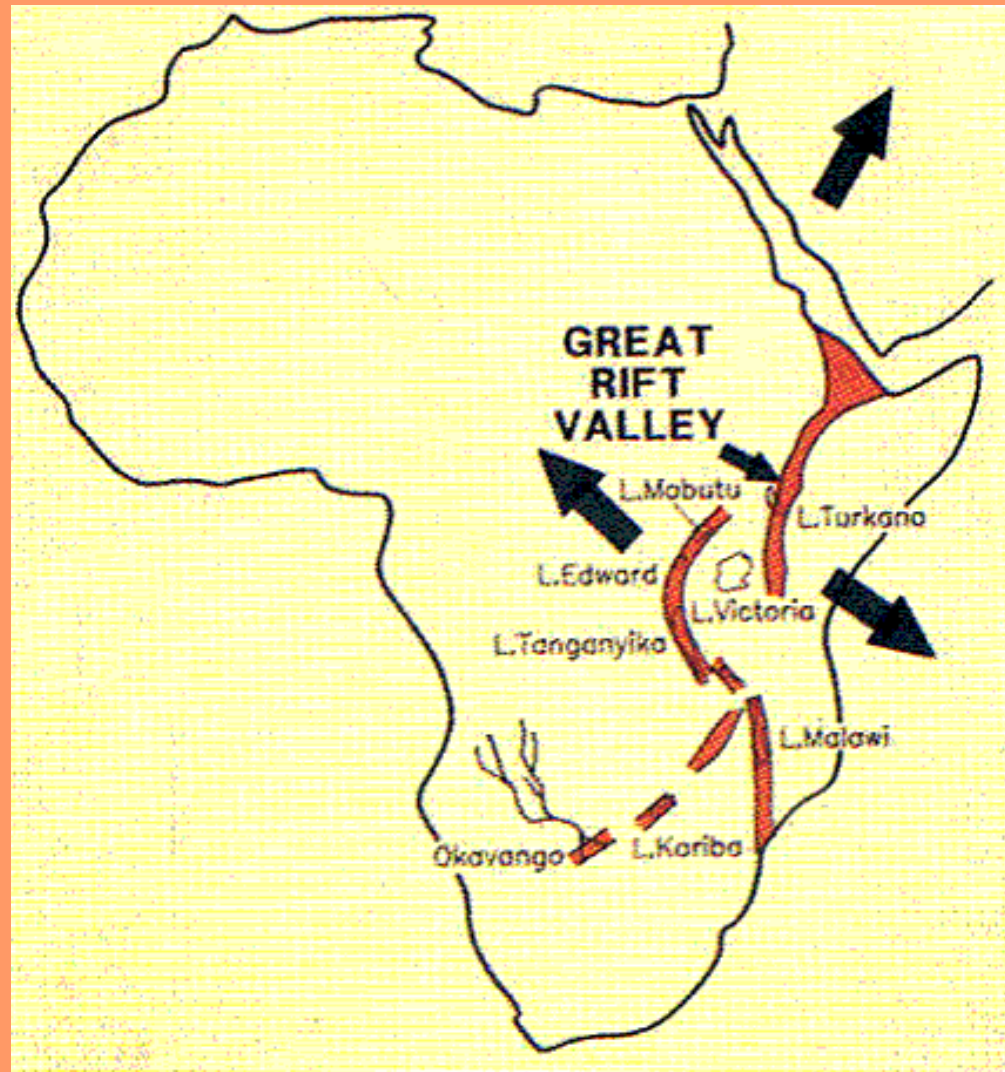


TOUGH CHOICE . . . Mr Petros Ndambakuwa and his wife Rhoda of Kapare Village destroy tobacco plants after a hail storm wreaked havoc in Magunje last week. Scores of farmers have lost tobacco worth thousands of dollars to hailstorms, prompting calls from various stakeholders for crop insurance.

EARTHQUAKES

- The biggest Southern African earthquake in decades struck the Save Valley in Mozambique on 23rd February 2007 at around 12:19am .
- The earthquake measuring 7,5 on the Richter scale — was centred on the north bank of the Save River, very close to a national park in a sparsely-settled area in Mozambique.
- 9 people were injured and property was damaged in some eastern parts of the country such as Chipinge District

The Eastern Highlands and Southern Mozambique are part of the tail end of the East African Great Rift Valley System.




Damages caused by an Earthquakes in Chipinge (2007)



Earthquakes

Hazard	Vulnerability	Capacity
<p>Earthquakes</p>	<p>Lake Kariba Both natural and reservoir induced earthquakes occur. Many events are felt by the locals especially Binga.</p> <p>Zambezi Valley and eastern border Mainly natural events associated with the east Africa rift system. Recently, rock bursts have been reported in the Penalonga area- indicative of mine induced events</p> <p>Nyamandlovu Aquifer Since 1999 four events recorded (mag 4.0 25/6/04)</p>	<p>Monitoring Monitoring of seismic activities in the country- Goetz Observatory</p> <p>Assessments CPO</p> <p>Mitigation Infrastructure development CPO</p> <p>Regional collaboration Data exchange with neighbours International collaboration Training of scientist.</p>

Technological Hazards

Hazard	Vulnerability	Capacity
<p>Transportation</p> 	<p>Public Commuters of public transport, Major transport routes</p>	<p>Early warning •ZRP, Traffic Safety Council, Transport</p> <p>Assessment •CPO</p> <p>Mitigation CPO •Education , <i>abstinence from alcohol and drugs</i>) •Examination and treatment of drivers •Environmental improvement (<i>road condition, lighting, signs & markings</i>) •Ecological modification •Enforcement •Emergency care</p>

Technological hazards cont


Hazard	Vulnerability	Capacity
Chemical Spills/ Explosions/ toxic waste/Air/ land pollution/ mine collapse	<ul style="list-style-type: none"> •Industrial sites of Harare, Bulawayo, KweKwe, Norton, Gweru, Mutare, Masvingo and mining areas •All major transportation routes and boarder areas 	<p>Early warning</p> <ul style="list-style-type: none"> -Industry, ZRP, Local Authorities, Chief govt. mining engineer <p>Assessments</p> <ul style="list-style-type: none"> - NSSA -CPO -Chief govt. mining engineer <p>Mitigation</p> <ul style="list-style-type: none"> NSSA CPO Mines

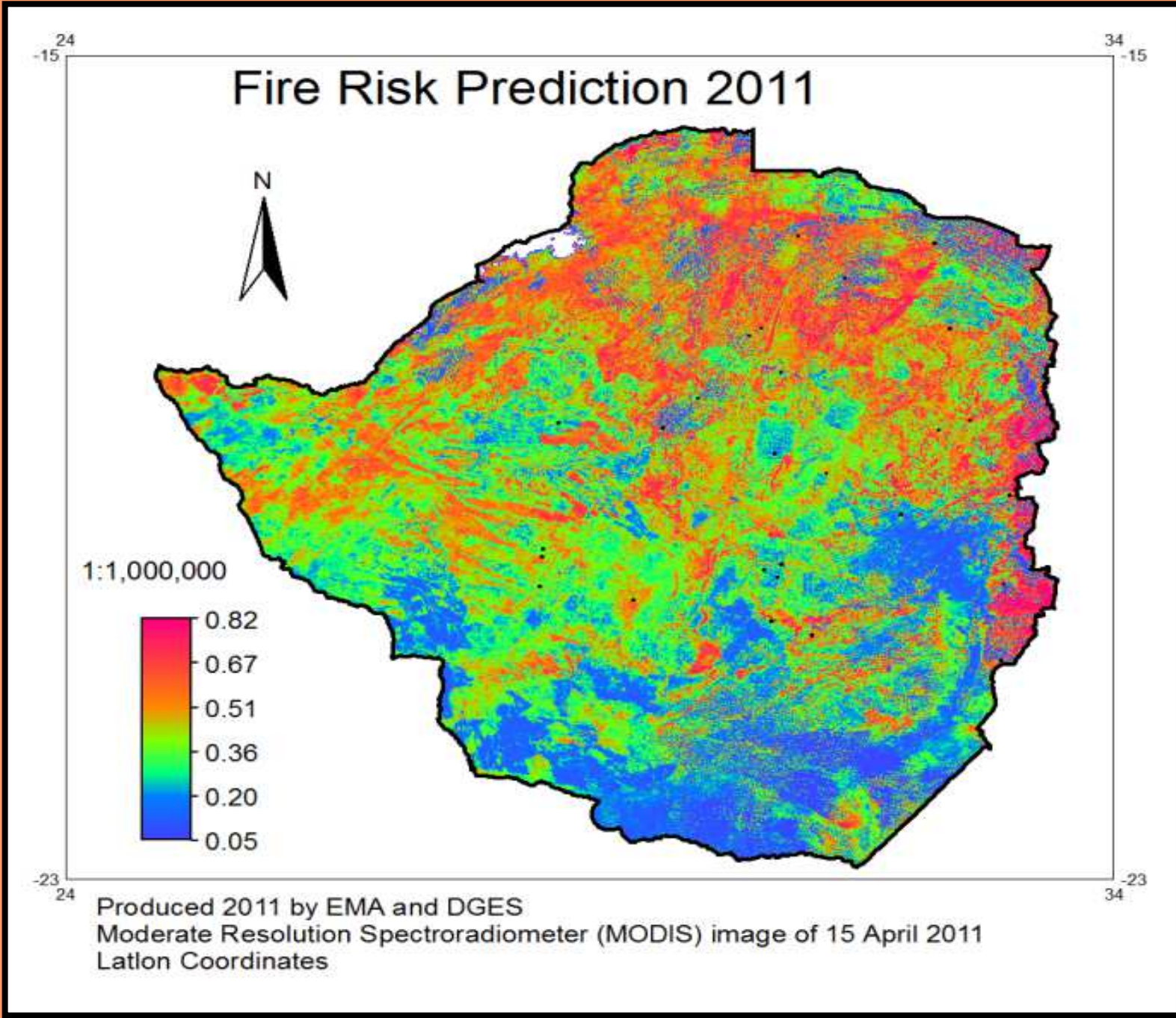


Environmental Degradation



Cont...

Hazards	Vulnerability	Capacity
<p>Environmental Degradation</p> 	<p>Communal areas, and areas with sandy and alluvial soils such as Gokwe, Muzarabani. Gold or former gold rich areas.</p>	<p>Early warning -EMA</p> <p>Assessments -Environment</p> <p>Mitigation EMA/AREX/ Social Welfare/ UN agencies, NGOs</p>
<p>Crowd Control problems / stampedes</p>	<p>Sporting Events Church gatherings</p>	<p>Early warning -ZRP</p> <p>Assessments -Emergency Services</p> <p>Mitigation - CPO</p>
<p>Fires</p>	<p>Forest Areas in the Eastern Highlands, road sides, along pathways, National Parks, Newly resettled areas, Domestic and Industry</p>	<p>Early Warning -MET, general public EMA</p> <p>Assessments Emergency services</p> <p>Mitigation CPO</p>



MINEFIELDS IN ZIMBABWE



LEGEND

1. VICTORIA FALLS TO MLIBIZI.....(220km)...	30km
2. MUSENGEZI TO RWENYA RIVER...(335km)...	205km
3. SHEBA FOREST TO BEACON HILL.....	50km
4. BURMA VALLEY.....	3km
5. RUSITU TO MUZITE MISSION.....	75km
6. SANGO BORDER POST TO LIMPOPO RIVER...50km	

SOUTH AFRICA

BIOLOGICAL HAZARDS

Malaria

Cholera

Typhoid

HIV/AIDS

Animal Epidemics

Crop Pests

CHOLERA

Vulnerability

- In the past it used to be common in areas with poor water & sanitation, temporary settlements and overcrowded slums.
- However, with the current economic hardships leading to shortage of water and sanitation facilities almost every area in Zimbabwe is now at risk of the disease.



Capacity

- Cholera control guidelines are in place
- strategic plan for cholera control has been developed
- operational procedures for cholera control are available
- MOHCW adopted and adapted WHO-Integrated Disease Surveillance and Response (IDSR) principles
- Training in cholera control and management has been conducted at national level and cascaded to Provincial, District, sub district structures

MALARIA



Vulnerability

- Malaria is common in the low lying areas such as the Zambezi valley and other region 4 and 5 areas in Zimbabwe.
- Morbidity and mortality increases with environmental deterioration, breakdown in vector control programs as well as poor access to health care services.

Capacity

- National Malaria Control Program Unit is in place within MOHCW.
- This unit undertakes some training and resource mobilization for malaria control activities such as malaria vector control and malaria case management.
- The program also benefits from the Global Fund.
- Malaria control guidelines are in place.

HIV/AIDS

Vulnerability

- There are important age, gender and geographical differences in HIV prevalence.
- HIV prevalence in small towns, farming estates and mines located in rural areas exceeds that in the major cities, whilst transmission into and within subsistence farming areas is also high.

Capacity

- The country has adopted a multi-sectoral approach to fighting HIV and AIDS to ensure that all sectors play a role in the fight against the pandemic under the guidance of National AIDS Council as the coordinating body.
- HIV/ AIDS is mainstreamed into various disciplines in Zimbabwe

Other Biological Hazards

Hazard	Vulnerability	Capacity
<p>Animal Epidemics</p> <ul style="list-style-type: none"> •Foot and mouth •>New Castle disease •Zoonotics •Anthrax and rabies 	<p>As per vector / disease zone</p> <p>Sporadic outbreaks</p>	<p>Early warning- Health and veterinary</p> <p>Assessments- Health and Veterinary</p> <p>Mitigation-Health and Veterinary, CPO</p>
<p>Crop Pests</p> <p>-Army worm and quellia birds</p>	<p>Cereal crops and people's livelihoods</p>	<p>Early Warning</p> <p>-Arex</p> <p>Assessments- AREX</p> <p>Mitigation AREX</p>

Army worms



12/15/2

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Locusts



12/15/2011

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Quelea Birds



12/15/2011

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Emerging Infectious Diseases

- These are newly identified and previously unknown infections that lead to public health problems either locally or internationally.
(*WHO*)

Example of such diseases include among others:

- Avian Influenza
 - SARS
 - Ebola
 - Viral Hemorrhagic Fever
 - Swine Flu
- Some of the diseases have not been detected in Zimbabwe but in various parts of the world.
 - There is therefore need to get prepared for such disease outbreaks in Zimbabwe in view of the globalization that includes mobility of people and international trade and commerce.

Challenges

- We still require extensive capacity building support in terms of human resource development, equipment and infrastructure development
- Centralisation of rescue equipment and trained personnel,
- Limited financial and material resources,
- Need for improved networking both at national and regional level.

Cont...

- Lack of concrete Sub-regional and regional co-operation on disaster risk reduction,
- Hazard maps are out dated eg drought prone areas, seismic zoning, flood prone areas etc,
- Inadequate real time hydrological networks to timely communicate impending flood disasters.

Thank you

