

**Module:** Public Health Disaster Planning for Districts

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**Author(s):** Dr. Roy William Mayega (Makerere University)

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# **Principles of Disaster Risk Reduction**

**The key role of public health preparedness**

**WHAT DOES THE TERM  
'DISASTER' MEAN TO YOU????**

# Definition of Disasters

“A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources.”

*WHO, 1998*



 All Hands Volunteer Photobank, flickr

# Definitions

- What is an emergency?
  - A state in which normal procedures are suspended and extraordinary measures are taken in order to avert a disaster

# Let's define other related terms...

- Hazard
- Risk
- Vulnerability
- Capacity



whiteafrican, flickr



Carol Mitchell, flickr

# Definitions

- What is hazard?
  - A threatening event or potentially damaging incident (*CDC*)
- What is risk?
  - The probability of suffering damage (to life, property, economic disruptions and environment) from a hazard for a given area and reference period. Risk is the product of hazard and vulnerability



# Definitions

- What is vulnerability?
  - Susceptibility to physical or emotional injury following a disaster
  - The degree to which an area, people, physical structures or economic assets are exposed to loss, injury or damage caused by the impact of a hazard (*Source: Red Cross*)
- What is capacity?
  - The resources available to cope with a threat or resist the impact of a hazard

# What then disaster risk?



 doou, flickr

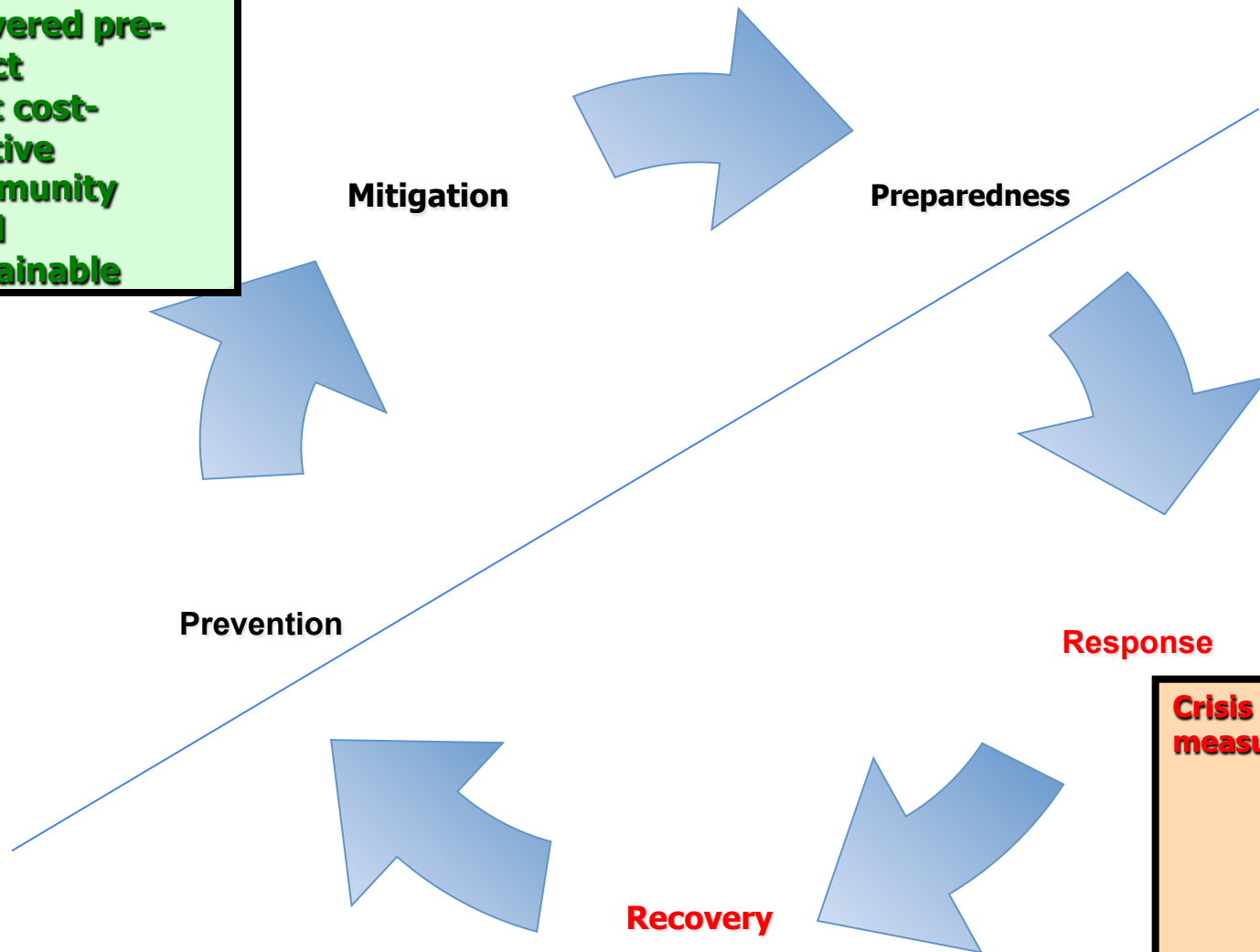
Risk =

[Hazard x Vulnerability] – [Capacity]

# The Disaster Management Cycle

**Risk reduction measures are**

- Delivered pre-impact
- Most cost-effective
- Community based
- Sustainable



**Crisis management measures are**

- Delivered post-impact
- Least cost-effective
- Nationally and internationally based
- Non-sustainable

# Pre Disaster Definitions

- Preparedness
  - Actions that result in persons knowing what to do and how to respond after disaster has occurred
- Prevention
  - Activities designed to provide permanent protection from disaster which include engineering and physical protective measures and legislation to control land use and urban planning
- Mitigation
  - Measures taken in advance of an event aimed at decreasing or eliminating its impact on society and environment



 waterdotorg, flickr

# Post Disaster Definitions

- Response
  - Decisions and actions taken during and after disaster. This includes immediate relief, rehabilitation and reconstruction
- Recovery
  - Activities that restore vital life support systems to normalize operating standards and long term activities that return life to normal
- Relief and Rescue
  - Exceptional measures to save lives (Rescue) and care for survivors (Relief)
- Rehabilitation
  - Restoring mental and physical health and stability of a community



 United Nations Photo, flickr



 Intrepid Flame, flickr



# An evolution in approach


- From Response and Relief



 Church Mission Society (CMS), flickr

- To Risk Reduction



 Sanofi Pasteur, flickr

# All disasters are local....

- All disasters occur locally in a particular community
- The earliest response to disasters often comes from the community itself
- The capacity of the community to respond to disasters should therefore be built
- Therefore, risk reduction measures start at the community level



 Lars Plougmann, flickr

# What is Disaster Risk Reduction?

- The conceptual framework of elements with possibilities to minimize:
    - *Hazards*
    - *Vulnerabilities*
    - *and therefore disaster risks* to:
      - Avoid (*prevent*) or
      - Limit (*mitigate and prepare* for)
- the adverse impacts of hazards within the broad context of sustainable development



# Risk Reduction versus Risk Management

- Risk Management
  - Prevention
  - Mitigation
  - Preparedness
  - Response
  - Recovery


- Risk Reduction
  - Prevention
  - Mitigation
  - Preparedness

## **Risk Reduction is:**

- **Pre-disaster**
- **Pre-emptive**
- **Part of development**

# Famine: What measures can be used to reduce risk of famine in your locality?



 Bert Kaufmann, flickr



 Felipe Moreira, flickr



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 SodexoUSA, flickr



 Bread for the World, flickr



 IFRC, flickr

# Flash Floods: What measures can be used to reduce risk of flash-floods in your locality?



 The Advocacy Project, flickr



 louris.yamaguchi, flickr

- Floods in Bwaise, and several Kampala Suburbs are natural disasters; but to what extent is the disaster risk exacerbated by ma's actions



# Slow Onset Floods: What measures can be used to reduce risk of slow onset floods?



 The Humanitarian Coalition, flickr

- Butalejja 2010: A river was diverted to flood the rice plains; over the years, the confluence kept on silting; authorities were aware; till 2010 when heavy rains caused flooding



 Peter Casier, flickr

# Famine: What measures can be used to reduce risk of landslides in your locality?



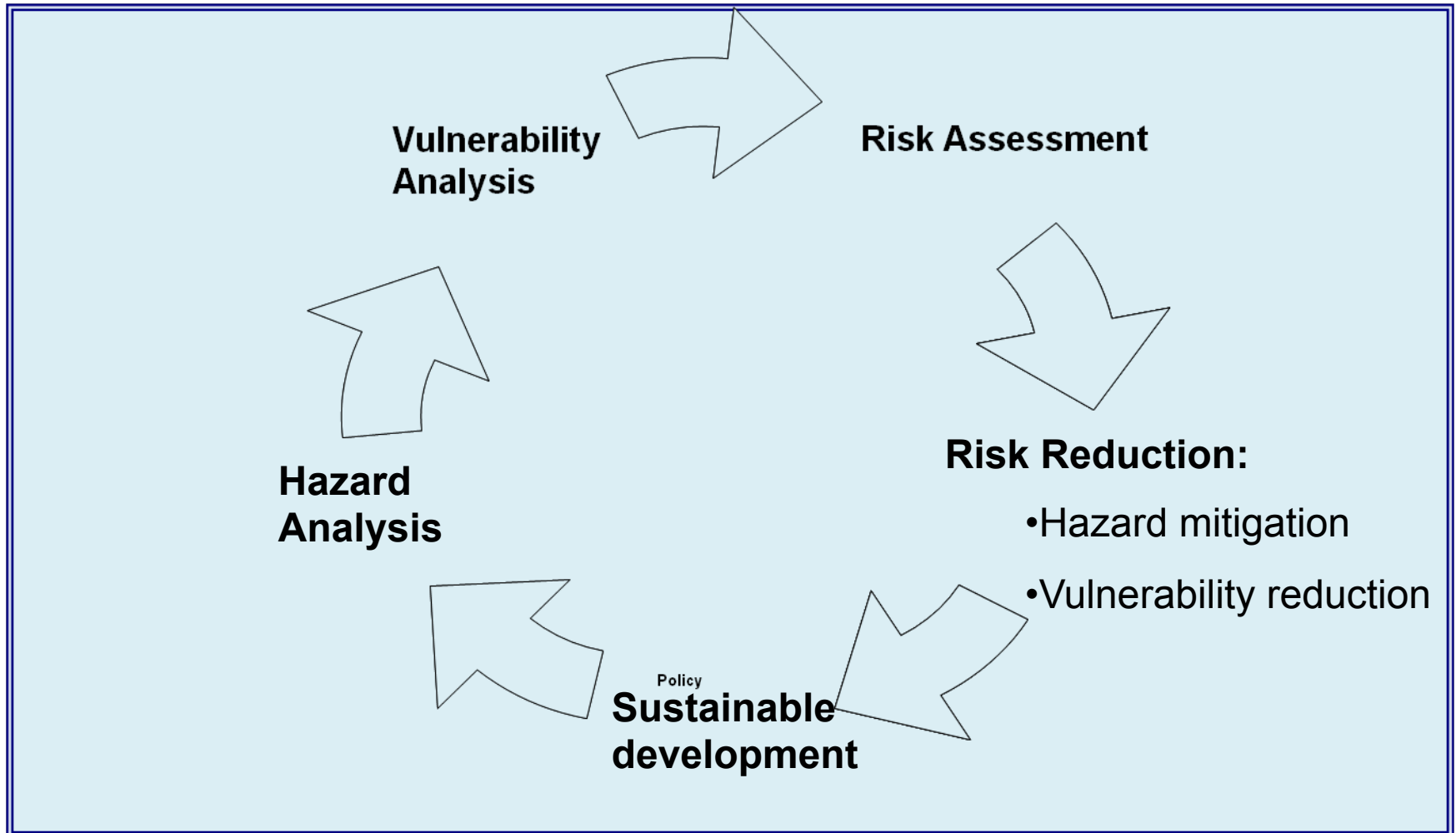
- Example of Mt. Elgon Region: Cracks developing in several sub-counties after heavy rains; last year, disaster struck in Bududa

# Approach to risk reduction

## An Integrated Emergency Management Approach



# The Risk Reduction Cycle



# What is Preparedness?

- Pre-disaster actions that result in persons knowing what to do and how to respond when disaster has occurs
  - It is long-term
  - Part of a larger risk reduction program
  - Comprehensive application of sustainable development
  - All-hazard
  - Multi-sectoral
  - Culturally sensitive and specific



 VC4Africa, flickr



# Keim's

## 11 E's of Emergency Preparedness (Mark Keim, CDC)

- Economic incentive
- Epidemiology
- Enforcement of codes
- Emergency plans
- Equipment stockpiling
- Education
- Exercise and drills
- Early warning
- Evacuation
- Evaluation
- Electronics (communication)



# Disaster Risk management

- Definition: It is defined as the process of identifying, analyzing and quantifying the probability of losses in order to undertake preventive or corrective actions
- This involves two types of activities ;
  - Planning actions to reduce vulnerability in areas where risk can be controlled, and
  - Establishing protective mechanisms against the potential economic losses from uncontrollable factors of natural hazards

# Risk Management

- It entails efforts and measures put in place to reduce risk in case of a disaster happening
- This is what is generally termed as disaster risk reduction
- It is also about commitments related to disaster and vulnerability reduction and improved early warning

# Risk management continues

- Since little can be done to prevent occurrence of most natural hazards, actions and activities should focus on reducing existing and future vulnerabilities to damage and loss
- There are three primary and interrelated categories in risk management:
  - risk identification
  - risk reduction
  - risk transfer
- These measures are mostly related to pre-disaster phases of disaster risk management and reflect the new approach in DRR

# Risk Mgt Cont...

- The pre-disaster phase of disaster risk management involves four distinct but interrelated components.
  - Risk identification,
  - risk reduction/mitigation,
  - risk transfer and
  - preparedness.

# Risk identification

- It is a thorough analysis of existing vulnerabilities, location, severity & intensity of threat
- The following activities help to identify and understand natural hazard risk:
  - Hazard data collection and mapping (frequency, magnitude and location) ,
  - vulnerability assessment (population and assets exposed),
  - risk assessment (probability of expected losses)

# Risk reduction or Prevention/ Mitigation:

- These are measures taken to eliminate or reduce the intensity of a hazardous event.
- These measures address existing vulnerabilities through measures like early warning
  - Include actions such as:
    - Implementation and enforcement of building standards
    - Environmental protection measures
    - Resource management practices
    - Mention others?
  - can be taken to reduce future vulnerability

# Even with risk reduction, preparedness is important

- Even when effective disaster reduction measures are in place, there would often be an element of risk that is residual or cannot be managed because it is either too costly or technically unfeasible to eliminate
- Preparedness is an important component of DRR which deals with residual and unmanaged risk



# Risk Transfer

- *These are mechanisms which aim at reducing actual vulnerability to financial risk by ensuring that funds are available when loss occurs from a disaster happening*
- *Risk transfer mechanisms are often inefficient from cost perspective, so it is important to take all the necessary measures to reduce the vulnerability of assets to be covered before transferring the risk*

# Risk transfer methods

- ***Without getting into details the main risk transfer/ risk financing methods include:***
- *Market Insurance and Reinsurance*
  - *This Insurance provides coverage for damage and expenses that are beyond the potential for budget self-insurance*
  - *It involves paying some premiums to an insurance company*
  - *Premiums are calculated in a way that they spread out the risk*
  - *This is not yet possible in Uganda, because of the mostly rural economy*
  - *However, formal businesses with capacity to do it are encouraged*

# Risk transfer methods

- *Budget self-insurance – Allocation of a small proportion of budget to be spent on improved maintenance*
  - *This can be done at the local government level*
  - *Districts should have a Risk Reduction strategy*
  - *Districts should implement activities that promote risk reduction*
  - *They should target the most vulnerable populations and causes of vulnerability*
  - *Includes compensation policy*

# Risk transfer cont...

- *Community insurance*
  - *Cooperatives*
  - *Community savings groups*
  - *Community granaries*
  - *Community policing*
  - *Resource conservation*
- *Household livelihood insurance mechanisms*
  - *Savings*
  - *Food security*
  - *Modern methods of production*

# Policy Framework for Disaster Risk Reduction

- Risk Reduction is a mechanism to reduce vulnerability
- It is a multi-sectoral and inter-institutional process
- Integrating Disaster Risk Reduction involves integrating into specific sectors
- Requires synergies between sustainable development and Risk Reduction



 bkgunner, flickr

# Examples of Disaster Risk Reduction

- Vulnerability and Risk assessment (analysis)
- Institutional capacities and operational abilities.
- Assessment of:
  - the vulnerability of critical facilities,
  - social and economic infrastructure,
  - the use of effective early warning systems (e.g. (Forecasting: Weather, epidemics, land-slides, etc)
  - the application of many different types of scientific, technical, and other skilled abilities (Examples of expertise required?)
- In many countries, Disaster Risk Reduction has not been prioritised in disaster management
- However, there is a current shift in this direction

# Key Instruments For Disaster Risk Reduction

- National Development Policy
- Poverty Reduction Strategy Papers
- Programmes for implementation of MDGs
- UN-Country Instruments
  - Country Cooperation Frameworks (CCF)
  - United Nations Development Assistance Frameworks

# National Development Policy and Plans

- Disaster risk reduction (DRR) is an all-encompassing entity that involves all sectors at national level
- National plans should therefore be the driving force of DRR
- They
  - Provide an overall development framework for implementing a national vision
  - Identify national development concerns
  - Define development goals and opportunities
  - Bring together all sectoral plans under a single framework (Integration) including risk reduction



# Poverty Reduction Strategies

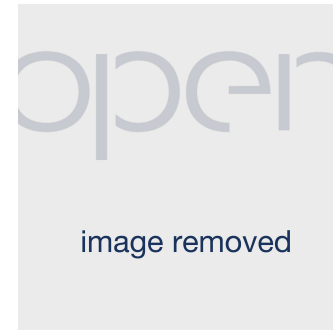
- Poverty Reduction programmes are articulated in a number documents in a number countries
  - National development policy and plans
  - In some countries there annual economic and social plans
  - The National Budget
  - Public Sector Investment Programmes
  - Poverty Reduction Strategy Papers

# Regional Frameworks

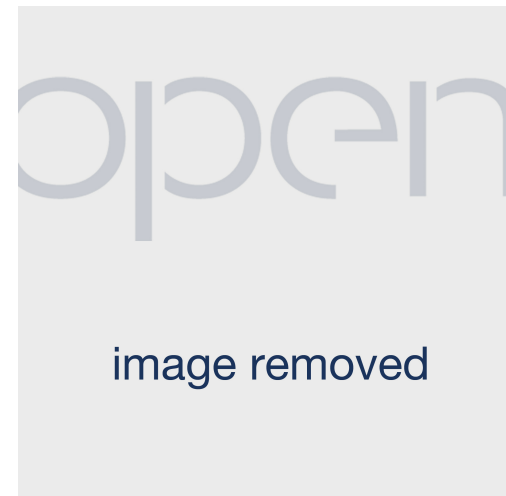
- The AU Framework for Disaster Response: e.g. AU Standby Force, Early Warning, Conflict Resolution, New Partnership for African Development (NEPAD)
- Inter-governmental Agency for Development (IGAD) Early Warning Framework
- The East African Community Early Warning Mechanism
- The Great Lakes Framework for Disaster Response
- The Regional Disaster Management Centre of Excellence

# International Framework

- The Hyogo Framework for Action (2005-2015) which aims to build resilience of nations and communities to disasters
- SPHERE standards as instruments for ensuring quality of response
- International Strategy for Disaster Reduction
- The UN under the UNDP has a number of instruments that provide for integrating Disaster Risk Reduction into development programmes



Please see original image of the SPHERE handbook at <http://www.sphereproject.org/handbook/>



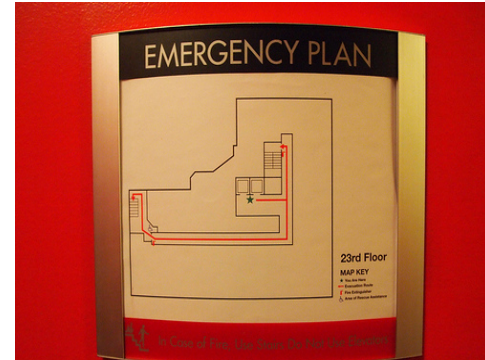
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# The Hyogo framework on risk Reduction

- The Hyogo Framework for Action, assists the efforts of nations and communities to become more resilient to and cope better with the hazards they face.
- Although the primary responsibility for its implementation rests with governments, collaboration and cooperation between all stakeholders in managing the risk is crucial

# Strategic Goals of the Hyogo Framework

1. Effective integration of disaster reduction into national policies, plans and programming at all levels
2. Strengthening of institutions and capacities at all levels
3. Systematic incorporation of risk reduction into the design and implementation of emergency response and recovery plans



original, flickr



Wikimedia Foundation



# Hyogo frame work: Recommended Actions

The Hyogo Framework for Action, commits governments as well as regional, International and NGOs to;

- Ensure that disaster risk reduction is a national and local priority
- 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 the underlying risk factors, and
- Strengthen disaster preparedness for effective response at all levels ( Community, Sub county, District, Regional and national levels

# END

Thank you for your kind attention

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