

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

**Organization:** East Africa HEALTH Alliance, 2009-2012

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

**Resource Title:** 2.1 Principles of Disaster Risk Reduction

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# **Principles of Disaster Risk Reduction**

**The key role of public health preparedness**

# What then disaster risk?



 doou, flickr

Risk =

[Hazard x Vulnerability] – [Capacity]

# Vulnerability to Natural Disasters

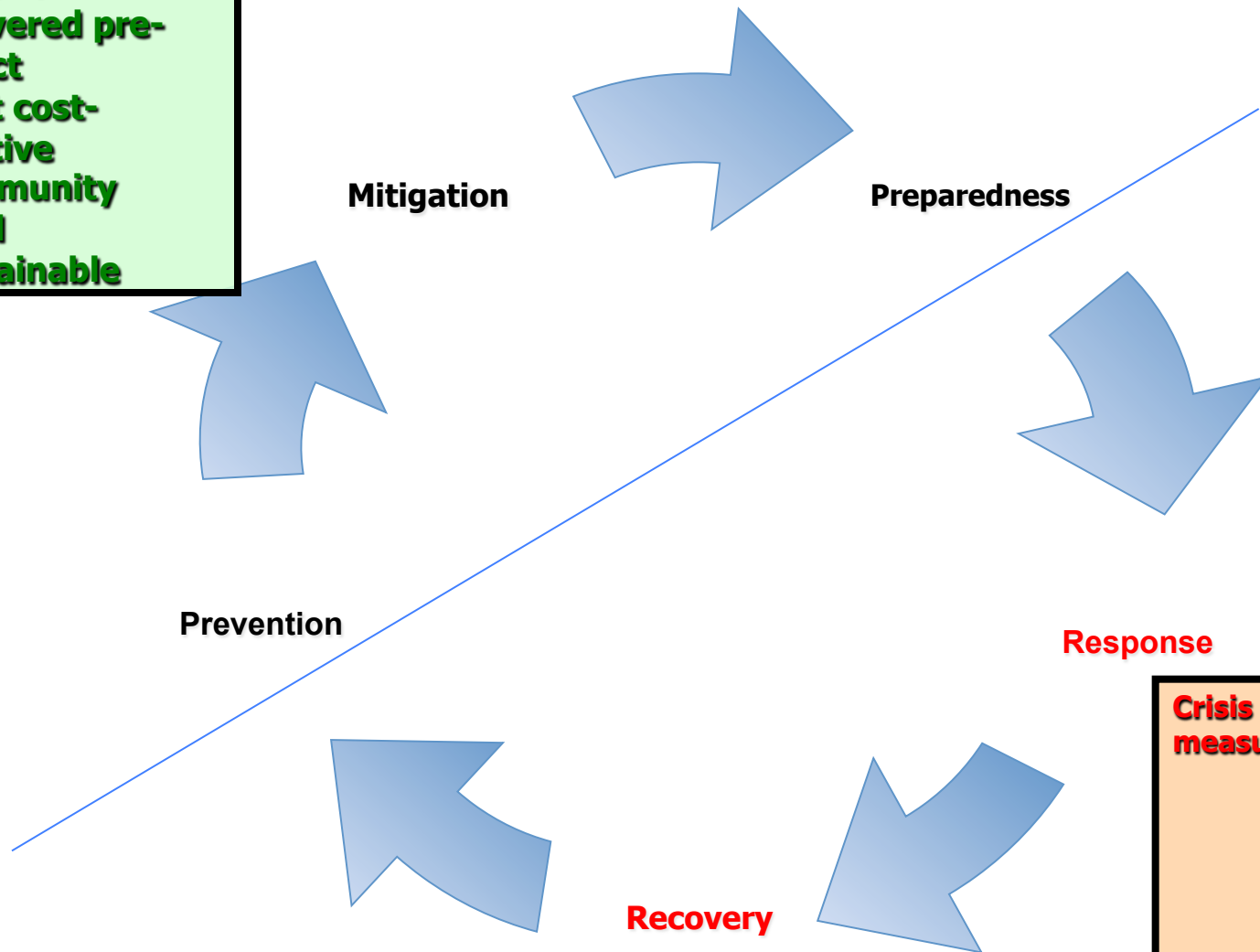
- 95% of national disaster deaths occur among 66% of the ***poorest countries***<sup>1</sup>
- From 1965-1992 more than 90% of all disaster victims lived in ***Asia and Africa***

1. Anderson, 1992
2. IDNDR, 1994

# 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

# An evolution in approach


- From Response and Relief



 Church Mission Society (CMS), flickr

- To Risk Reduction



 Sanofi Pasteur, 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

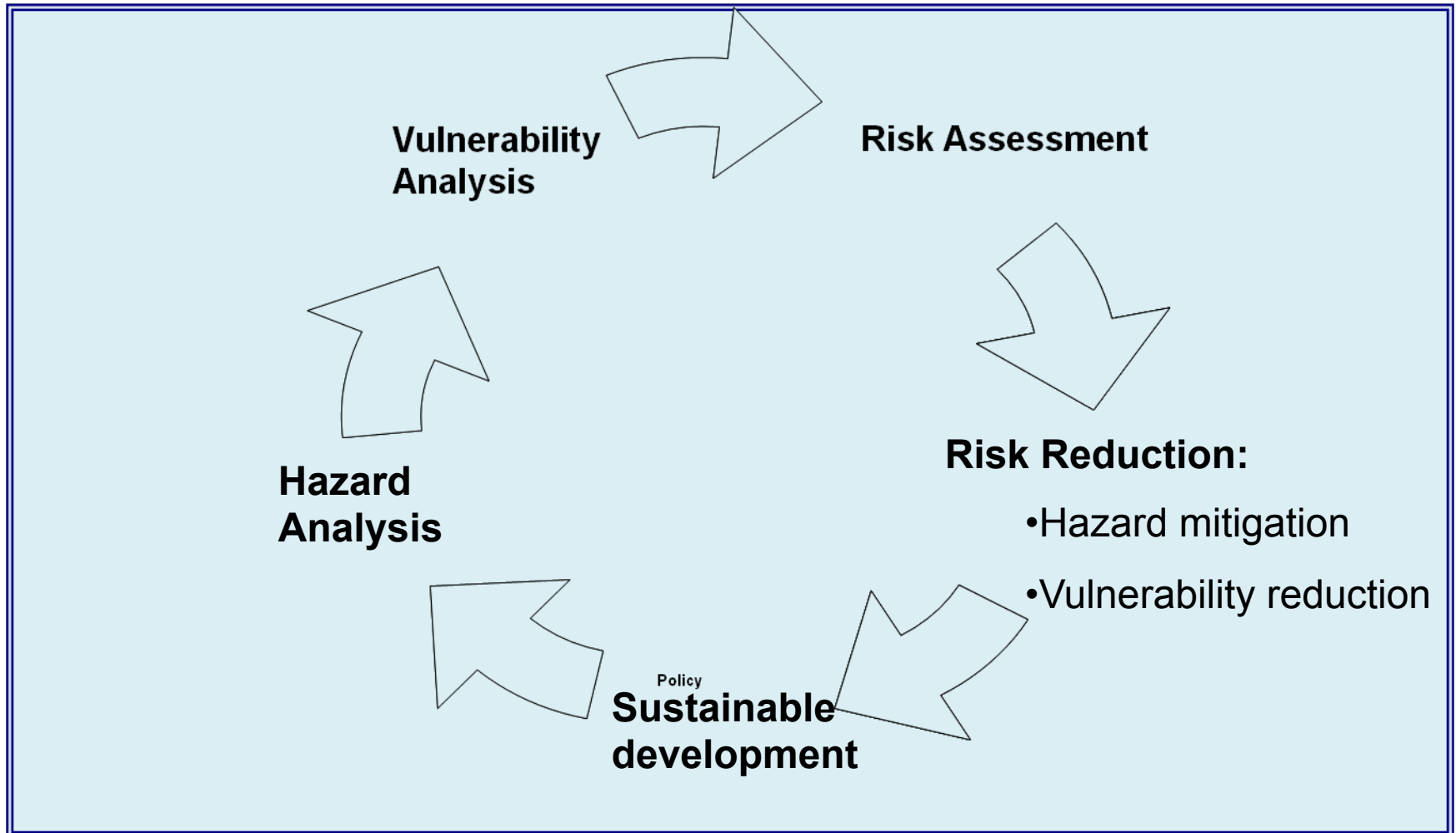
- Risk Management
  - Prevention
  - Mitigation
  - Preparedness
  - Response
  - Recovery

- Risk Reduction
  - Prevention
  - Mitigation
  - Preparedness

## **Risk Reduction is:**

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

# The Risk Reduction Cycle



# Approach to risk reduction

## An Integrated Emergency Management Approach



# 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

# Objectives of Public Health Emergency Preparedness

- Prevent morbidity and mortality
- Provide care for casualties
- Manage adverse climatic and environment conditions
- Ensure restoration of normal health
- Re-establish health services
- Protect staff
- Protect public health and medicinal assets

# 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)



# Risk management

- 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

# 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.

It is a thorough analysis of existing vulnerabilities, location, severity & intensity of threat

# Risk identification

- 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*

# 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

# 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

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