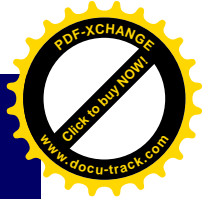
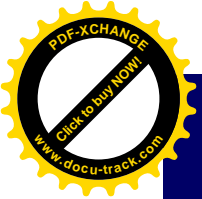


PEOPLES UNIVERSITY
Disaster Management and Emergency Planning Module

Hazards

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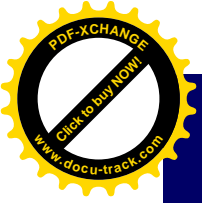
Recap: Disaster or hazard?

- n As covered in the introductory slides, a '*hazard*' is a natural or manmade phenomenon that can threaten lives or property.
- n A '*hazard*' does not necessarily become a '*disaster*'
- n It only becomes a *disaster* when the hazard occurs, lives are lost and property damaged and destroyed beyond the capability of the community to manage it.
- n The challenge for emergency planners therefore is to prevent a hazard becoming a disaster.

Mitigation : *Prevention is better than cure*

- n The first step in the emergency management cycle is that of mitigation.
- n Mitigation seeks to prevent a disaster occurring, or minimizing its frequency or impact.
- n Hazard identification, risk assessment, analysis and management is one such key aspect of mitigation.



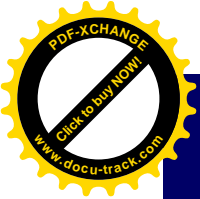


Hazard Analysis

- n Identify potential hazards that might threaten the community.
 - (“what are the hazards?”)

- n Process of ‘risk assessment’. This involves determining:
 - the probability of it happening (“how likely is it to occur”),
 - its severity (“how bad can it be?”), and
 - its likely location (“where is it likely to happen?”)

- n Assess the community’s vulnerability
 - (“how vulnerable are we?”)



Examples of types of disasters

n Rapid Onset

– Natural disasters

- n earthquakes
- n cyclones
- n floods
- n landslides
- n tsunami

– Man-made disasters

- n war
- n riots
- n fires
- n train accidents
- n oil/chemical spills
- n industrial accidents

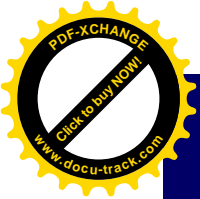
n Slow Onset

– Natural disasters

- n drought
- n Epidemics
e.g. HIV/AIDS

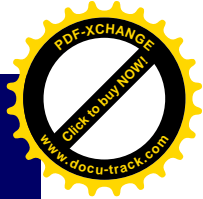
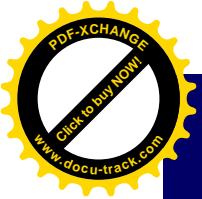
– Man-made disasters

- n chronic war
- n displacement
- n overfishing
- n environmental degradation
- n industrial pollution



Hazard identification & risk assessment

- n There are a multitude of potential hazards in any setting.
- n Although it would be ideal to prepare for all hazards, often this is not possible as it is often not practical or feasible due to resource constraints.
- n Emergency planners firstly need to identify all the hazards that could occur in their setting, but then prioritise which ones to target their efforts and resources.
- n Based on research, community perception or historical evidence
 - Has it happened before?
 - Where did it occur?
 - What happened then? What was the impact?

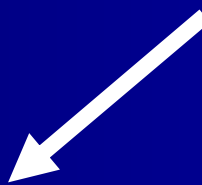
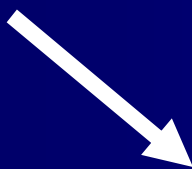


Targeting hazards

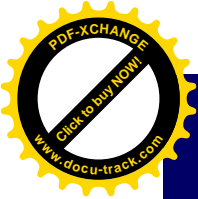
Which hazards needs to be tackled first?

LIKELIHOOD

SEVERITY

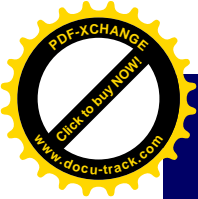


The risk that a hazard poses to the community is the likelihood of it occurring, and its potential severity and impact on the community



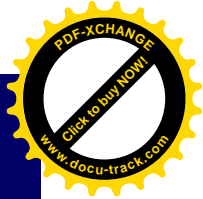
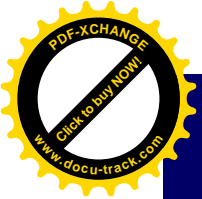
Risk Matrix: The following is just one example of a risk matrix that could be devised to help prioritise which hazards are tackled.

<i>Likelihood</i>	<i>Severity</i>				
	Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
5. Certain	Moderate	Moderate	High	High	High
4. Likely	Low	Moderate	Moderate	High	High
3. Possible	Very Low	Low	Moderate	High	High
2. Unlikely	Very Low	Very Low	Low	Moderate	High
1. Rare	Very Low	Very Low	Low	Moderate	Moderate

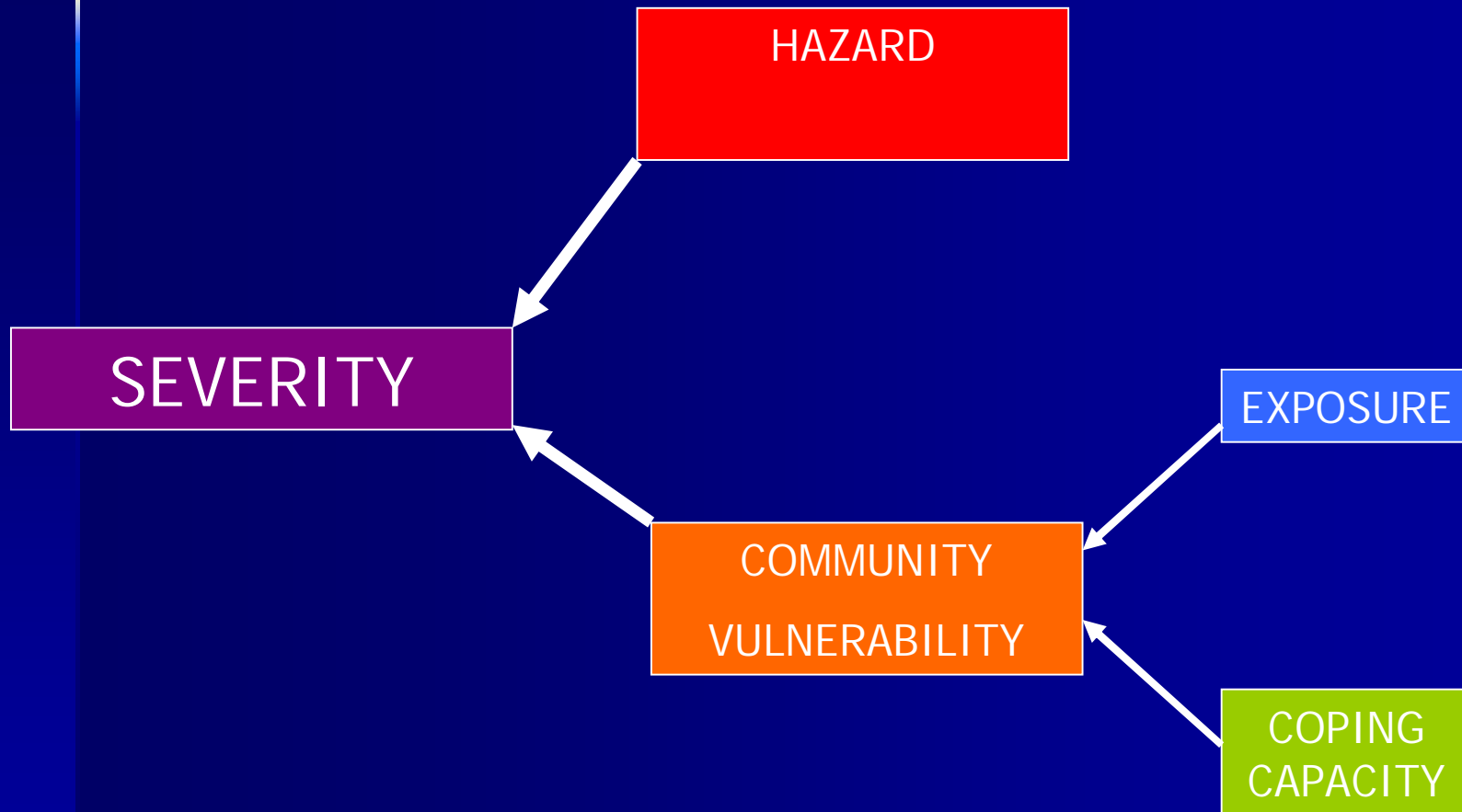


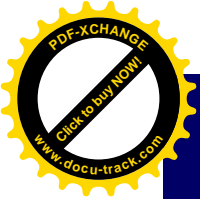
Priority setting example: The following table shows how planners in an area could use a scoring system to help prioritise flooding over earthquake measures

Problem:	<i>Earthquake</i>	<i>Flooding</i>
Frequency (Likelihood):	<i>Very rare (1)</i>	<i>Frequent (4)</i>
Severity:	<i>Severe (4)</i>	<i>Moderate (3)</i>
Public concern:	<i>Low (1)</i>	<i>Moderate (2)</i>
Sensitivity to public health measures:	<i>Moderate (3)</i>	<i>High (4)</i>
Total score:	<i>9</i>	<i>13</i>



The severity of a disaster is related to the hazard causing it and the vulnerability of the community. The community's vulnerability in turn is dependent on how exposed it is to the hazard and its coping capacity.

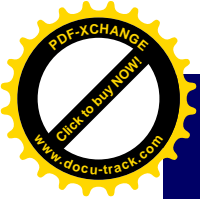




Community vulnerability

- n As mentioned in the previous slide, the likely impact of any hazard is dependent on that particular community's vulnerability.

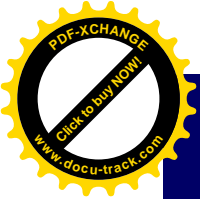
- n In order to assess this, planners need to have knowledge of the community
 - Know areas and resources at risk of damage (exposure to hazard)
 - Assess the loss that would result if a disaster occurred
 - Assess the community's ability to cope (coping capacity)



Example of community vulnerability

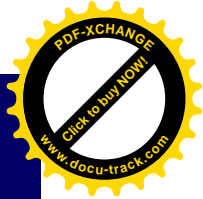
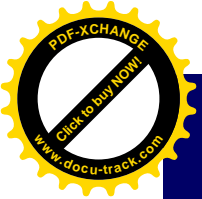
n Exposure to hazard

- Homes built in risky areas (e.g. flood prone land, or hillsides susceptible to landslides, or coastal areas exposed to hurricanes)
- Lack of protection from hazards (e.g. no monsoon drains in flood prone areas, or protective vegetation or storm walls in coastal areas)
- Overcrowding may predispose to outbreaks of infectious diseases
- Lack of immunisations also predisposes to outbreaks of vaccine preventable diseases



Example of community vulnerability

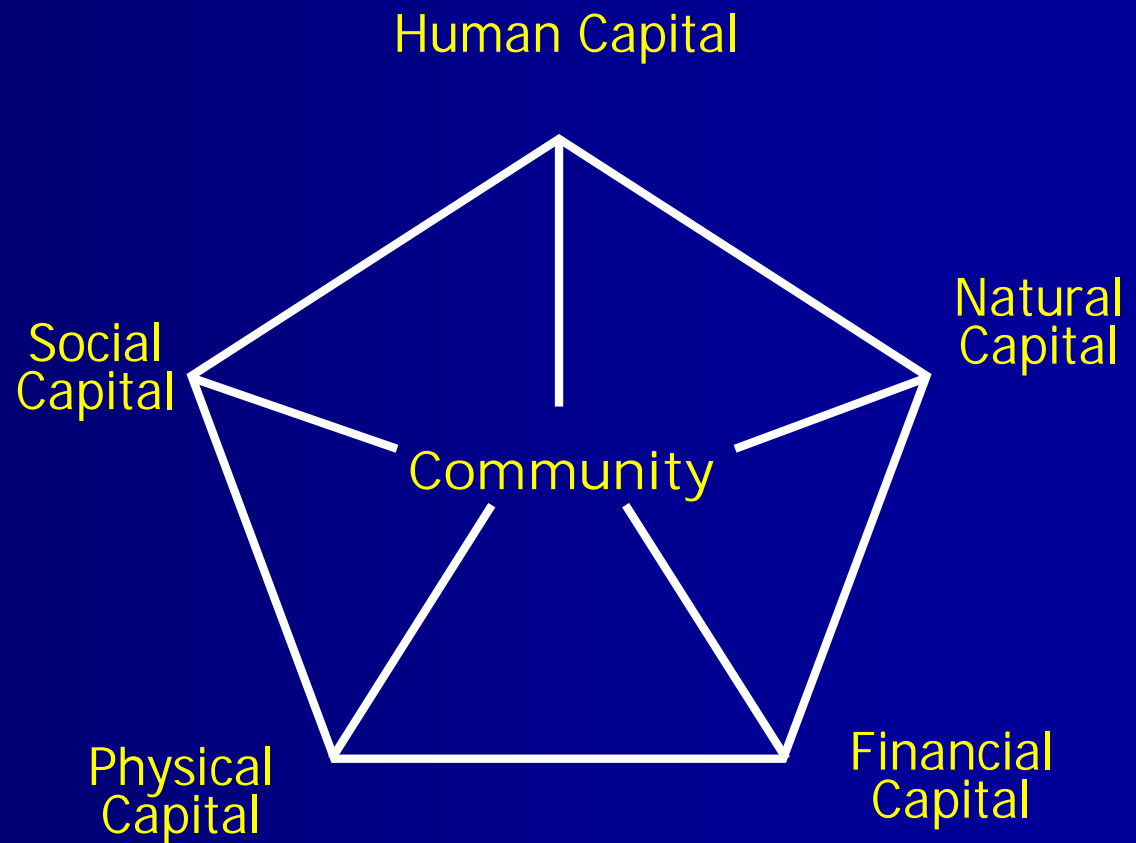
- n Coping capacity
 - Lack of training, knowledge or awareness of risks in the community
 - Socially deprived groups who may lack the finances or resources to cope
 - Vulnerable groups such as the disabled, elderly, and the young who may not be able to respond adequately (e.g. unable to get to storm shelters in time, or access humanitarian aid afterwards)
 - Lack of community structures or strong local authorities to manage the disaster situation
 - Availability of health resources to cope with a disaster

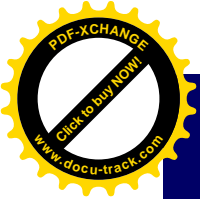


Sustainable Livelihoods Framework

n This framework was developed by the Institute of Development Studies

n It is another way of looking at a population's vulnerability

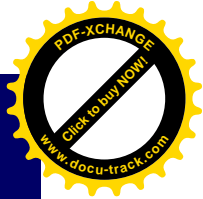
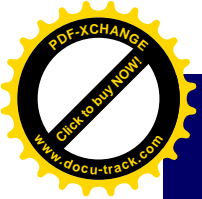




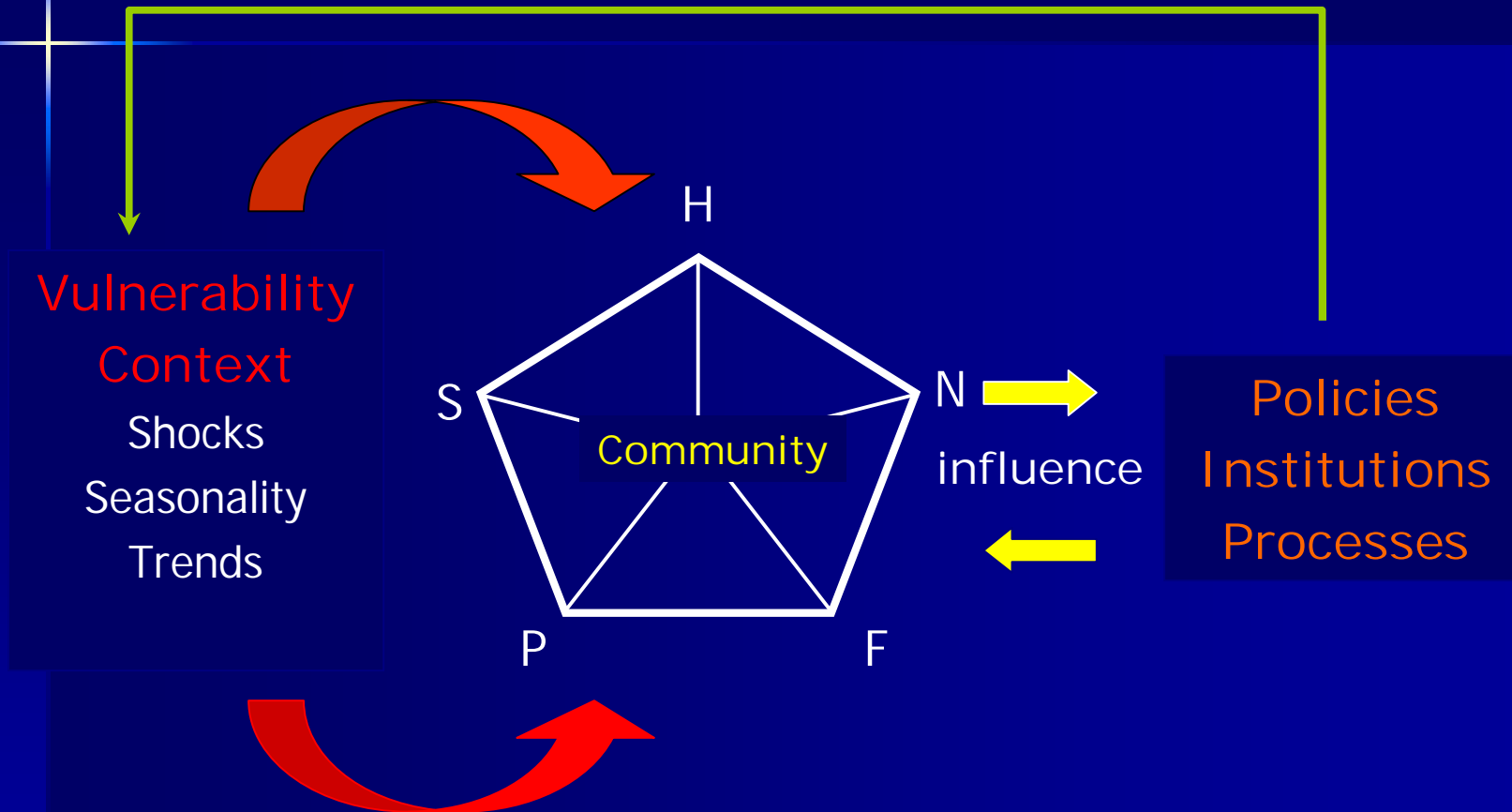
Sustainable Livelihoods Framework

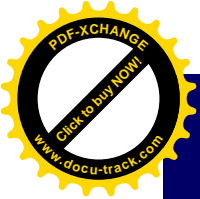
5 dimensions are identified in the framework which affect a community or individual's vulnerability. Interventions targeting these 5 dimensions can help reduce their vulnerability.

- n Human capital: health, education, coping strategies, ability to work
- n Natural capital: e.g. land, water, wildlife, animal resources
- n Social capital: e.g. networks, relationships, leaders
- n Financial capital: e.g. income, savings
- n Physical capital: e.g. technology, infrastructure



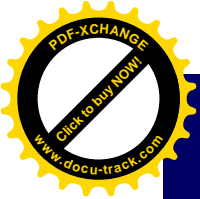
A community or individual's vulnerability is affected by shock events, trends, seasonality and changes. The vulnerability in turn can be influenced by government or local policies, impact of programme interventions by various institutions and processes.





Examples of influences on vulnerability

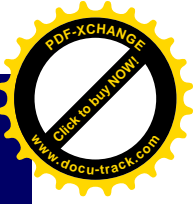
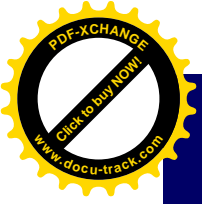
- n Shocks – e.g. acute human health problems/illnesses, natural disasters, economic crises, livestock and crop losses, conflict and wars
- n Seasonality – e.g. variations in prices of crops produced, amount of crops produced, employment opportunities, health
- n Trends – in population, resources, economy, policies and technology



More on the Sustainable Livelihoods Framework

- n An informative guide to this framework can be downloaded from

http://www.livelihoods.org/info/guidance_sheets_pdfs/section_2.pdf



? Exercise: Hazard identification & risk assessment

- n Can you list what hazards could occur in your area?
- n Can you identify which hazards need more urgent attention?
- n What is your community's vulnerability to this hazard like?