



TOWARDS A RESILIENT SOUTHERN AFRICA: STRATEGIC LEADERSHIP ISSUES IN DISASTER RISK MANAGEMENT

Resilient economies: disaster risk management, agriculture and business

DMS

DISASTER MANAGEMENT SOLUTIONS

Scope

Next 30 minutes

Address the question:

What role does sustainable development and resilient economies (including agriculture, commerce & industry) play in a disaster risk management context considering components like energy and transport?

Presentation Map



Presentation Map



1. Disaster Risk Fundamentals

Risk assessment encompasses the systematic use of available information to determine the likelihood of certain events occurring and the magnitude of their possible consequences.

As a process, it is generally agreed that it includes:

- identifying the nature, location, intensity and probability of a threat;
- determining the existence and degree of vulnerabilities and exposure to those threats;
- identifying the capacities and resources available to address or manage threats; and
- determining acceptable levels of risk.

“Living with Risk”



Definition of a Disaster

“disaster” means a progressive or sudden, widespread or localised. natural or human-caused occurrence which-

(a) causes or threatens to cause-

(i) death, injury or disease;

(ii) damage to property, infrastructure or the environment; or

(iii) disruption of the life of a community; and

(b) is of a magnitude that exceeds the ability of those affected by the disaster to cope with its effects using only their own resources

Disaster

means a progressive or sudden, widespread or localised. natural or human-caused occurrence which-

HAZARD

Disaster

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HAZARD

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VULNERIBILITY

Disaster

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HAZARD

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VULNERABILITY

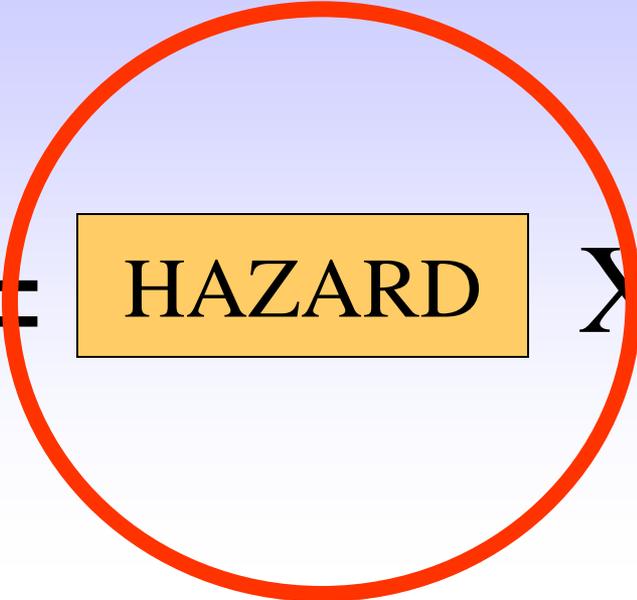
(b) is of a magnitude that exceeds the ability of those affected by the disaster to cope with its effects using only their own resources

CAPACITY

$$\text{Disaster Risk} = \text{HAZARD} \times \frac{\text{VULNERABILITY}}{\text{CAPACITY}}$$

**Disaster
Risk**

=



HAZARD

X

VULNERABILITY

CAPACITY

**Disaster
Risk**

=

HAZARD

X

VULNERABILITY

CAPACITY

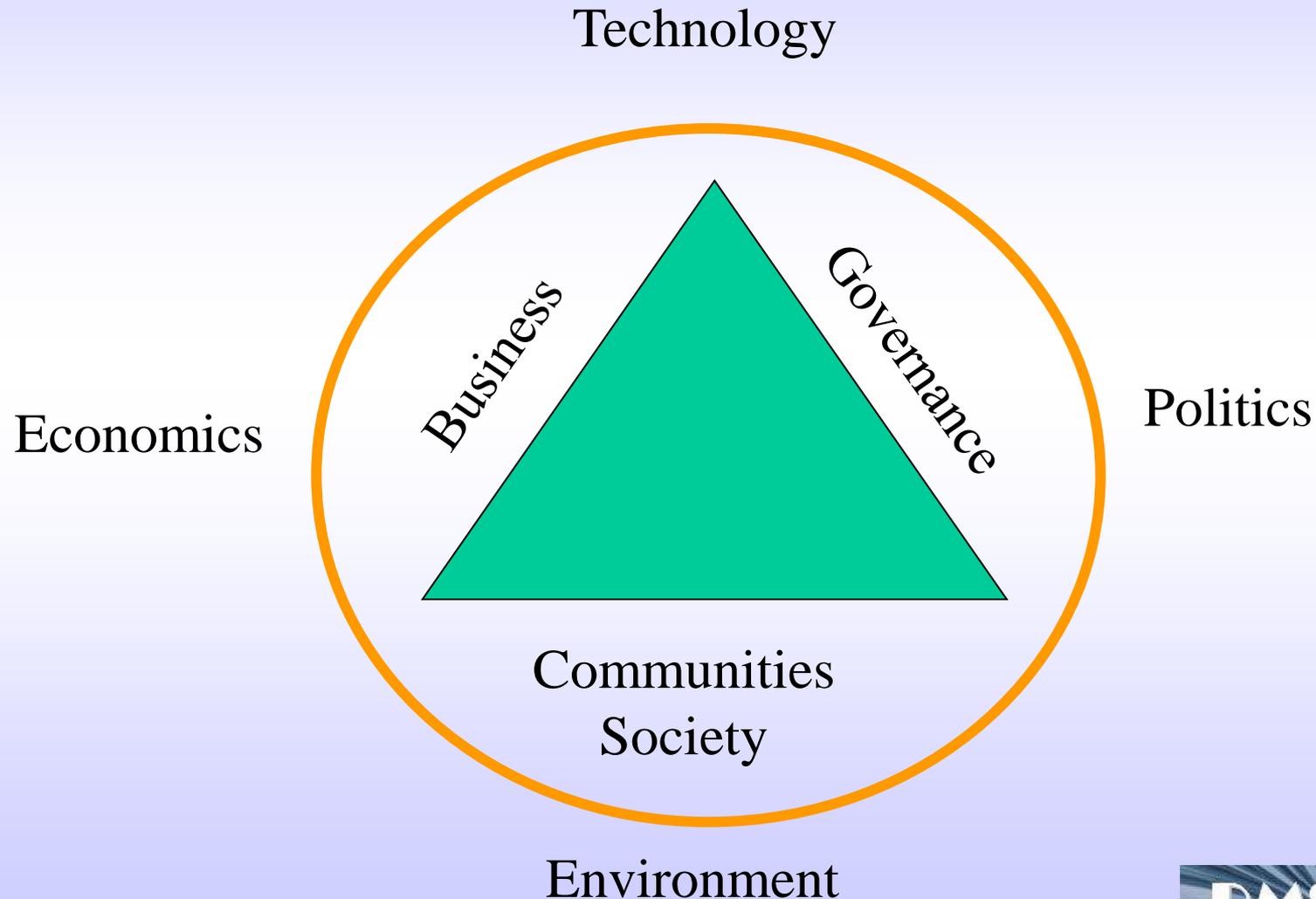


“Natural Disaster Hotspots: A Global Risk Analysis,” The World Bank report, New York, March 29, 2005

Columbia University, the World Bank, the Norwegian Geotechnical Institute and other partners

3.4 billion people, more than half the world’s population, live in areas where at least one hazard could significantly impact them.

Simplistic world



Other key findings include:

- 20 % of the Earth's land surface is exposed to at least one natural hazards;
- 160 countries have more than 25% of their population in areas of high mortality risk from one or more hazards;
- More than 90 countries have more than 10 % of their population in areas of high mortality risk from two or more hazards;
- In 35 countries, more than 1 in 20 residents lives at relatively high mortality risk from 3 or more hazards;

Other key findings include:

- More than 33% of the United States' population lives in hazard-prone areas, but only 1 % of its land area ranks in the highest disaster-related mortality risk category;
- Taiwan may be the place on Earth most vulnerable to natural hazards, with 73 % of its land and population exposed to three or more hazards;
- More than 90 % of the populations of Bangladesh, Nepal, the Dominican Republic, Burundi, Haiti, Taiwan, Malawi, El Salvador, and Honduras live in areas at high relative risk of death from two or more hazards; and
- Poorer countries in the developing world are more likely to have difficulty absorbing repeated disaster-related losses and costs associated with disaster relief, recovery, rehabilitation and reconstruction.

Natural disasters are a dramatic example of people living in conflict with the environment.

- Disasters have become all too common in recent years, and their frequency continues to escalate.
- From 1990 to 1996, the insurance industry paid out \$48 billion worldwide for claims from weather-related losses.
- Acts of nature are not inherently catastrophic. Hurricanes, tornadoes, fires, floods and the like are simply natural occurrences.
- **They only become disasters when they conflict with people and property.** The more development in a hazard area, the more disastrous the consequences.

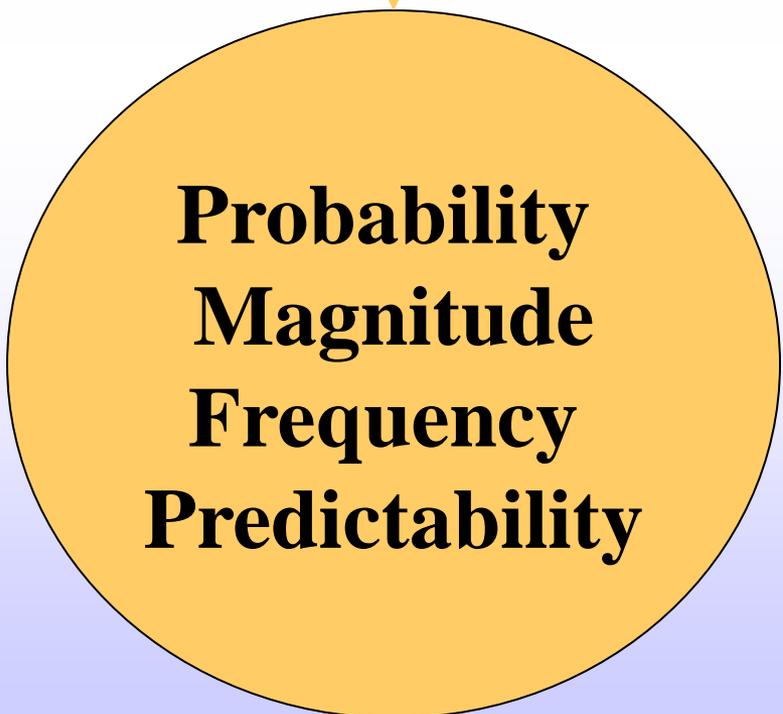
**Disaster
Risk**

=

HAZARD

X

$$\frac{\text{VULNERABILITY}}{\text{CAPACITY}}$$



**Disaster
Risk**

=

HAZARD

X

VULNERABILITY

CAPACITY



**Probability
Magnitude
Frequency
Predictability**

**Can it be
Prevented or
Reduced ?**

Hurricanes Katrina, Rita and Wilma



Between late August and mid October 2005, three of the six most intense storms ever recorded in Atlantic Basin history devastated the Gulf Coast and Yucatan Peninsula.

Abnormally high ocean temperatures fuelled the explosive growth of Hurricanes Katrina, Rita, and Wilma. Recent studies suggest that excess carbon dioxide and other gases that trap heat in the atmosphere are causing seas to warm to new depths and high temperatures, which contribute to more powerful storms.

Resources

[OCEAN WARMING and Hurricanes](#)

[The post-Katrina environmental catastrophe: A diary of toxic injustice.](#)

[Talking points on Hurricanes Rita and Katrina, and climate change](#), by SEEN's Daphne Wysham

["Green Relief and Reconstruction"](#) (Alternet) and ["We Rebuilt This City"](#) (Grist) articles by SEEN's Jim Vallette.

IMF-World Bank Investment Plan A Recipe for Climate Disaster

April 23, 2006 (Washington, DC) –

The World Bank's new investment framework to tackle climate change **does nothing to address global warming**, while sacrificing the poorest on the altar of “business as usual,” activists charged today, speaking as World Bank and IMF staff approved the framework at their spring meetings in Washington.

IMF-World Bank Investment Plan A Recipe for Climate Disaster

- The Bank was asked in July 2005 by G8 (the UK, US, Canada, Japan, France, Germany, Italy and Russia) to develop the framework for climate stability.
- But research conducted by the Institute for Policy Studies has found that the World Bank's **oil, gas and coal projects** financed just since 1992 **will release over 43 billion tons of CO₂** over their lifetimes.

Energy

IMF-World Bank Investment Plan A Recipe for Climate Disaster

- The World Bank has yet to conduct a full assessment of the climate impact of all of its lending.
- The Bank remains heavily invested in fossil fuels close to \$30 billion worth since 1992.
- The Bank has also ignored the 2004 recommendation of its own “extractive industries review” to get out of all oil and coal investments by 2008 on the grounds that the poorest are harmed by these investments.



IMF-World Bank Investment Plan A Recipe for Climate Disaster

- Instead, the Bank strategy proposes the world embrace untested coal technologies, nuclear power, and large hydropower as solutions to global warming, while giving short shrift to renewable energy.
- The starting point for the World Bank's investment strategy is a 60% increase in greenhouse gases over current levels by 2030, which is the International Energy Agency's "business as usual" scenario.
- An alternative scenario developed by the IEA would result in a 30% increase in energy related CO₂ emissions by 2030 over current levels.



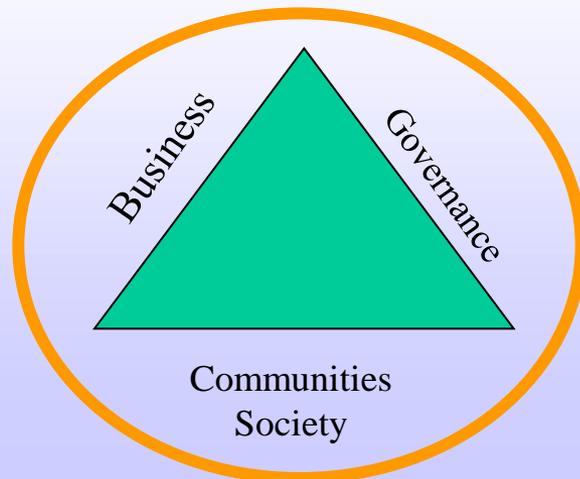
IMF-World Bank Investment Plan A Recipe for Climate Disaster

- “This is a giant step backward from the G8’s Renewable Energy Task Force, which in 2001 envisioned providing one billion people with renewable energy by 2010,” said Daphne Wysham, a fellow with the Institute for Policy Studies in Washington.
- “The World Bank must get out of fossil fuels now and not promote dangerous, expensive nuclear technologies - if we are to avert certain catastrophe for the world’s poorest.”



IMF-World Bank Investment Plan A Recipe for Climate Disaster

“Only a comprehensive shift to renewables and to strengthening community-centric energy security programs can contribute to a reduction in greenhouse gases,” said Smitu Kothari, Director of Intercultural Resources, in New Delhi, India.



Energy

IMF-World Bank Investment Plan A Recipe for Climate Disaster

“We expect the World Bank to lead, not follow. The Bank cannot bow under pressure from the carbon lobby to continue to promote the status quo. Many developing countries are in a great position to leapfrog over old, outdated technologies and to not follow our wasteful model,” said Stephen Mills, director of International Programs at the Sierra Club.

**Disaster
Risk**

=

HAZARD

X

VULNERABILITY

CAPACITY

**Disaster
Risk**

=

HAZARD

X

VULNERABILITY

CAPACITY

Exposure / Impact



resources are limited...

Many natural resources, both renewable and non-renewable, are already severely over-used. To take a few examples:

- 1,200 million hectares of agricultural land has been degraded so badly over the last 45 years that the average farmer cannot afford to restore it;
- 13 of the world's 15 major ocean fisheries are over-fished or under threat;
- 56 million hectares of forest across the globe were lost between 1990 and 1995.
- Excessive use of fossil fuels is leading to climate destabilisation;
- The prevalence of toxic chemicals and metals is having a major impact on health.

resources are limited...

- In fact, if people all over the world were to consume at the levels that many in the North do already, we would need at least **8 planets** to provide us with the resources we need by the year 2050.

Faced with facts like these

- It is quite clear that **resource use must be reduced** significantly;
- that **unsustainable economic growth** - as prescribed by the current economic model - **conflicts with this goal**.
- Global **resource use has to be within sustainable levels** for the long-term health and benefit of all.
- This will require significant **changes to production and consumption patterns** (which will in turn require effective and far-sighted international agreements).

Disaster Risk

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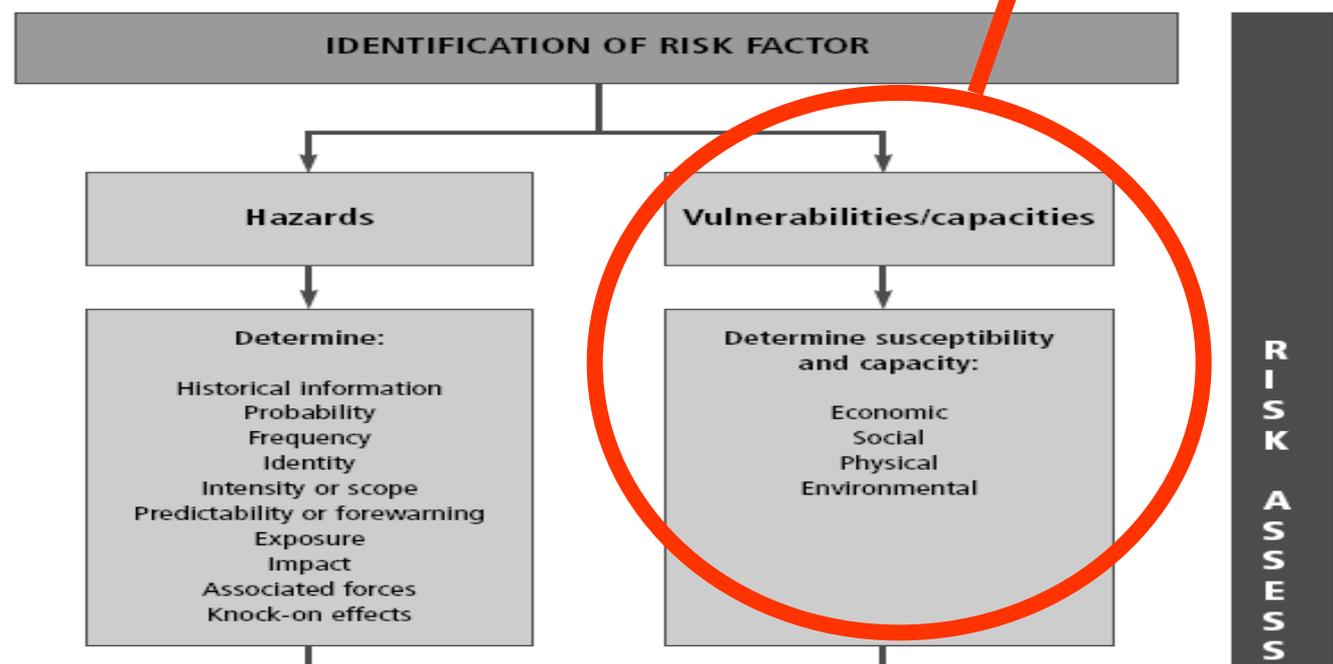
HAZARD

X

VULNERABILITY

CAPACITY

Figure 2.1: The basic stages of a disaster risk assessment



**Disaster
Risk**

=

HAZARD

X

VULNERABILITY

CAPACITY

P.E.S.T.E.L.



Disaster Risk

=

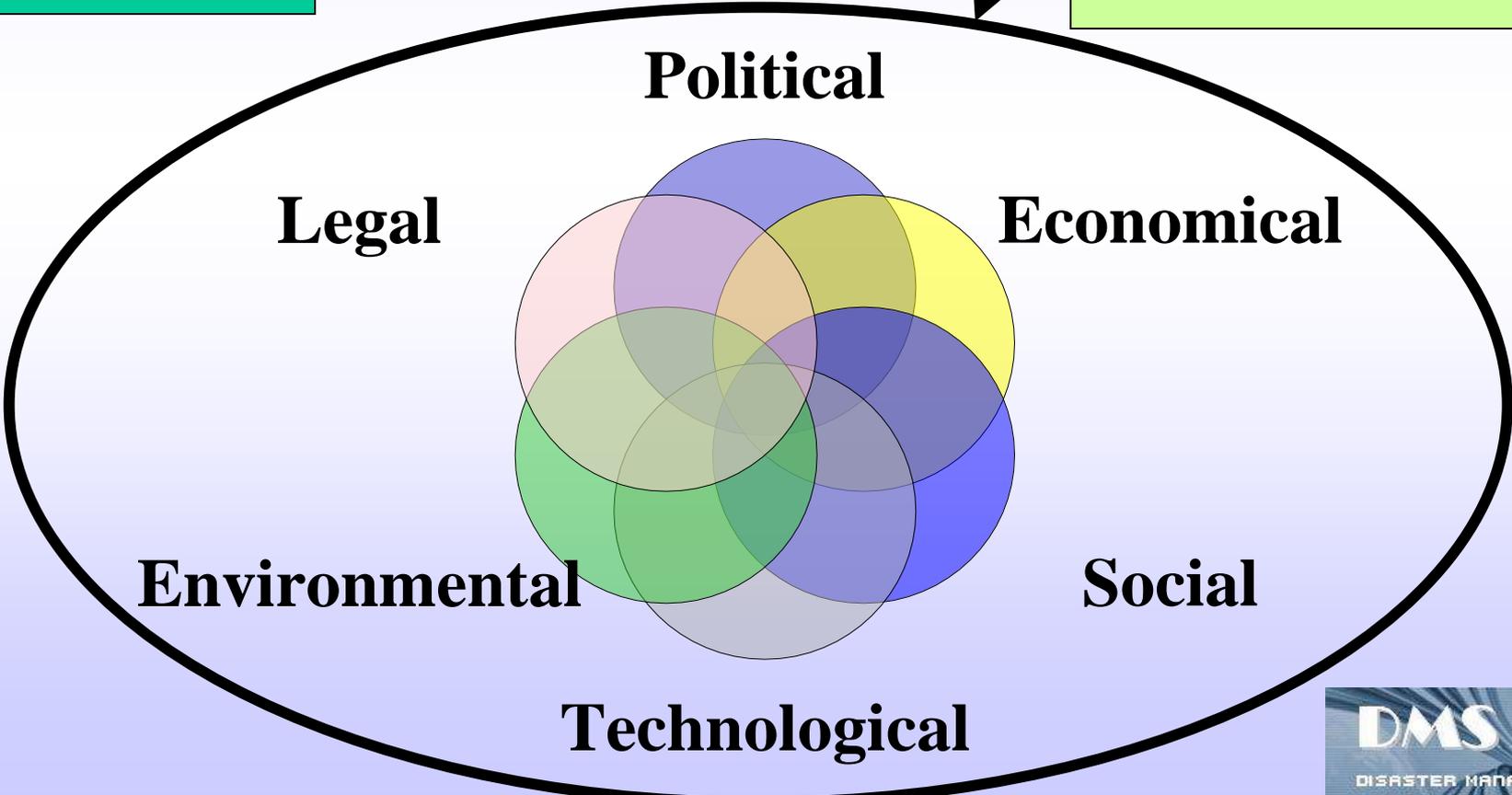
HAZARD

X

VULNERABILITY

CAPACITY

P.E.S.T.E.L.

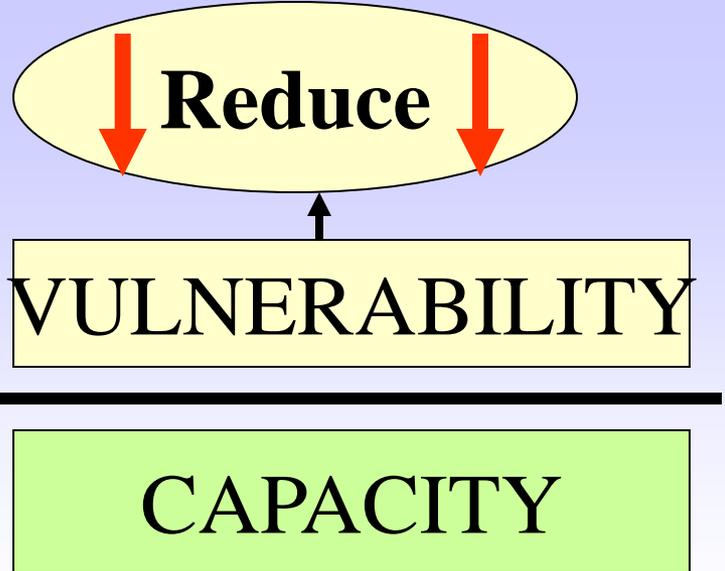


**Disaster
Risk**

=

HAZARD

X



$$\text{Disaster Risk} = \text{HAZARD} \times \frac{\text{VULNERABILITY}}{\text{CAPACITY}}$$

The diagram illustrates the formula for Disaster Risk. On the left, a green box contains the text "Disaster Risk". This is followed by an equals sign, then an orange box containing the word "HAZARD". To the right of "HAZARD" is a large "X" symbol. This is followed by a fraction: a yellow box containing "VULNERABILITY" on top, a horizontal line, and a light green box containing "CAPACITY" on the bottom. A red oval is drawn around the "CAPACITY" box.

**Disaster
Risk**

=

HAZARD

X

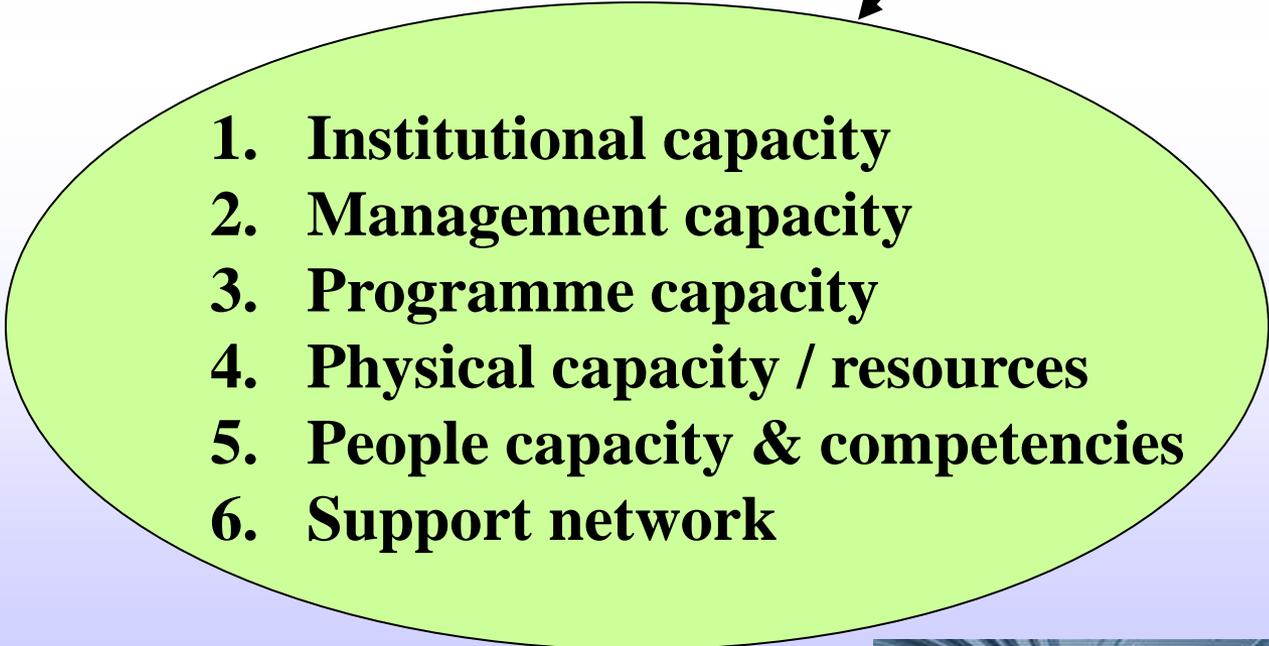
VULNERABILITY

CAPACITY



**Ability to manage &
cope with the situation
using own resources**

$$\text{Disaster Risk} = \text{HAZARD} \times \frac{\text{VULNERABILITY}}{\text{CAPACITY}}$$

- 
1. Institutional capacity
 2. Management capacity
 3. Programme capacity
 4. Physical capacity / resources
 5. People capacity & competencies
 6. Support network

**Disaster
Risk**

=

HAZARD

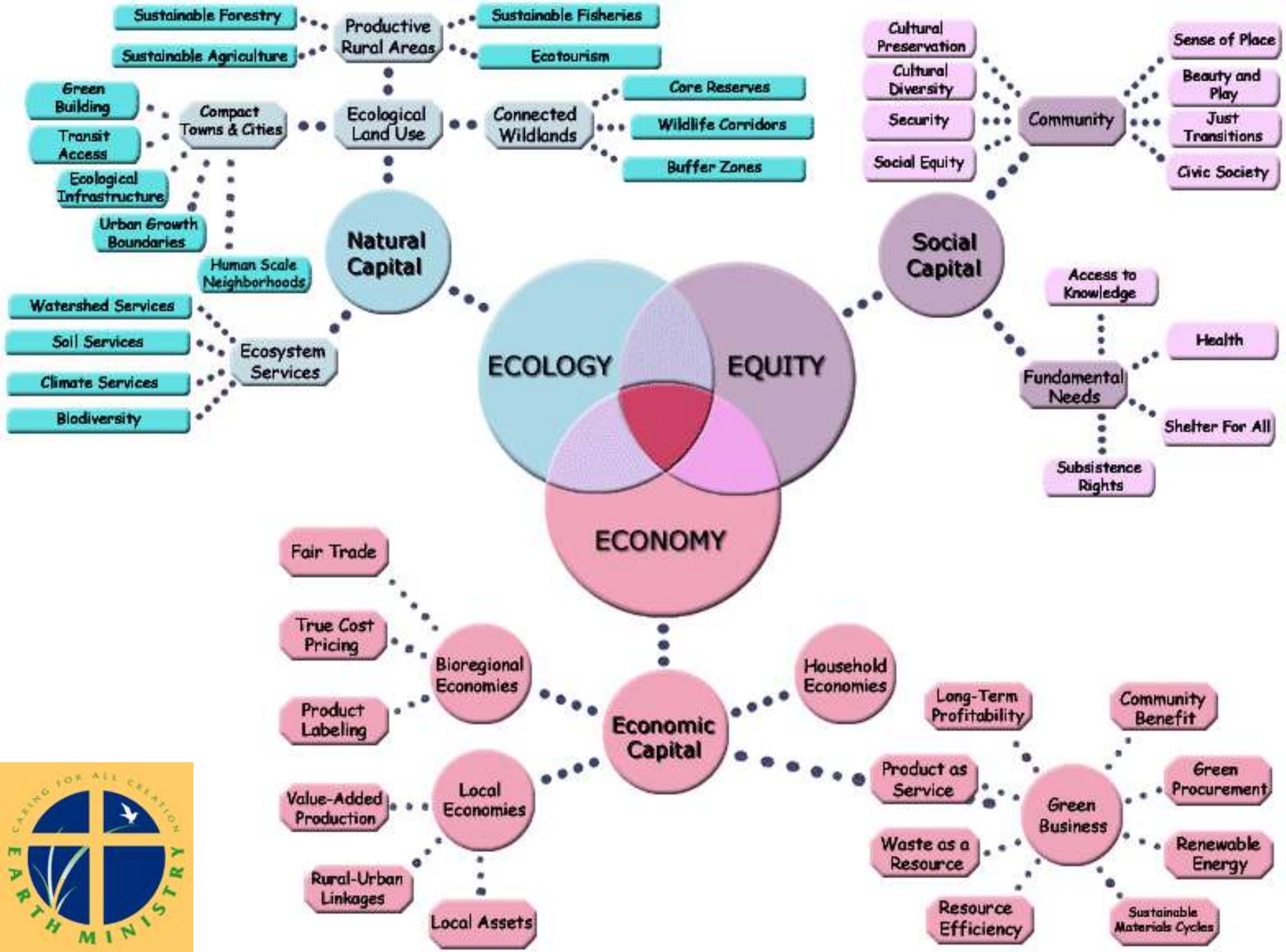
X

VULNERABILITY

CAPACITY

Capital

- 1. **Institutional capacity**
- 2. **Management capacity**
- 3. **Programme capacity**
- 4. **Physical capacity / resources**
- 5. **People competencies**
- 6. **Support network**



Business capacity?

"Two out of five companies that experience a catastrophic event or prolonged outage never resume operations.

Of those that do, one of three goes out of business within two years as a direct result of that outage or event.

The bottom line: **if hit by a major disaster, there's a 60% chance the company will be out of business within two years."** *Gartner*

Business capacity?

- June 27, 2006 - An AT&T Inc. national study on business continuity and disaster recovery reveals that **28 % of U.S.-based companies do not have adequate plans in place** to cope with natural or other potential disasters.
- “Despite the devastating effects of Hurricanes Katrina and Rita in 2005, nearly **50% of the 1,000 companies polled by AT&T also said that they do not take specific protective actions** even when state or federal governments issue warnings for an impending disaster, such as severe weather.”

**Disaster
Risk**

=

HAZARD

X

VULNERABILITY

CAPACITY

Prevent or Reduce

Build / improve

Reduce



Disaster Risk

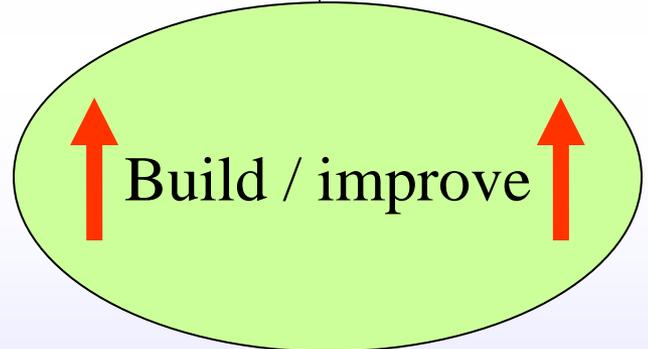
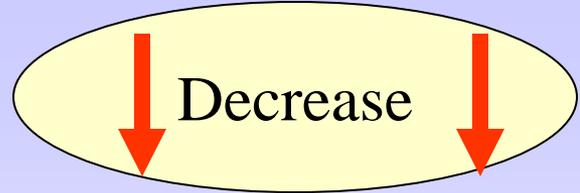
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HAZARD

X

VULNERABILITY

CAPACITY



HOW?

Presentation Map



3. The Challenges

**Does sustainable development
offers a way out?**

What is sustainable development?

Sustainable Development is defined by the United Nations as:

“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

The Global “bigger-picture”

- Sustainable development implies not only disaster-resistance but also **resource efficiency** – the **prudent use of energy, water, and materials** to ensure supplies for future generations.
- While at first glance this facet of sustainable development may seem unrelated to disaster prevention.
- An increasing body of evidence points to human energy use – **specifically the burning of fossil fuels** – as a factor in global climate change.

The Global “bigger-picture”

- **Global climate change**, in turn, may be at least partially responsible for the increased number and severity of storms.
- By making efficient use of energy resources, disaster-prone communities that employ sustainable development are also doing their part to slow global warming and temper the very storms that threaten them.

Sustainable development offers a way out.

- For some communities, the only solution is relocation, moving entirely off the floodplain, out of harm's way.
- For others, sustainable development means **restricting new construction** in particularly vulnerable areas, elevating structures to remove the threat of flooding, or building smarter, stronger buildings that are more hazard-resistant.
- Post-disaster evidence and inspections following Hurricane Andrew revealed that insurance losses could have been reduced in some cases by as much as 50 % if building codes had been properly enforced. Adopting more stringent codes shows promise to reduce losses even further.

Sustainable development offers a way out.

- Sustainable development can help prevent acts of nature from becoming disasters.
- Just as industries around the country are finding it smarter to prevent pollution rather than clean it or attempt to control it, disaster-prone communities are starting to embrace sustainable development as a means to remove – or at least mitigate – their conflict with the environment.

Striving for sustainability is a daunting task, even for those communities that aren't disaster-prone.

- Changing the way we use resources and approach development is slow-going and often frustrating.
- But steps are being taken throughout the U.S. that, when tallied, amount to a promising shift away from business as usual.
- Disaster-prone communities are waking up to new scenarios that offer hope and stability, not risk and destruction.

Plan of Implementation of the World Summit on Sustainable Development

Institutional framework for sustainable development

A. Objectives

B. Strengthening the institutional framework for sustainable development at the international level

C. Role of the General Assembly

D. Role of the Economic and Social Council

E. Role and function of the Commission on Sustainable Development

F. Role of international institutions

G. Strengthening institutional arrangements for sustainable development at the regional level

H. Strengthening institutional frameworks for sustainable development at the national level

I. Participation of major groups

Poverty eradication

Eradicating poverty is the greatest global challenge facing the world today and an indispensable requirement for sustainable development, particularly for developing countries.

Changing unsustainable patterns of consumption and production

- Fundamental changes in the way societies **produce and consume** are indispensable for achieving global sustainable development.
- All countries should promote **sustainable consumption and production patterns**, with the developed countries taking the lead and with all countries benefiting from the process.
- Governments, relevant international organizations, the private sector and all major groups should play an active role in changing unsustainable consumption and production patterns.

Promote an integrated approach to policy making at the national, regional and local levels for

- land use,
- infrastructure,
- public transport systems & providing safe, affordable and efficient transportation,
- goods delivery networks,
- increasing energy efficiency,
- reducing pollution, congestion and adverse health effects
- limiting urban sprawl,
taking into account national priorities and circumstances.

Protecting and managing the natural resource base of economic and social development

- Human activities are having an increasing impact on the integrity of ecosystems that provide essential resources and services for human well-being and economic activities.
- Managing the natural resources base in a sustainable and integrated manner is essential for sustainable development.

The African picture

- Africa's efforts to achieve sustainable development have been hindered by conflicts, insufficient investment, limited market access opportunities and supply side constraints, unsustainable debt burdens, historically declining levels of official development assistance and the impact of HIV/AIDS.

NEPAD

- The New Partnership for Africa's Development (NEPAD) is a commitment by African leaders to the people of Africa.
- It recognizes that partnerships among African countries themselves and between them and with the international community.
- It provides a framework for sustainable development on the continent to be shared by all Africa's people.

NEPAD

- “Create an **enabling environment** at the regional, sub-regional, national and local levels in order to achieve **sustained economic growth and sustainable development** and support African efforts for peace, stability and security, the resolution and prevention of conflicts, democracy, good governance, respect for human rights and fundamental freedoms, including the right to development and gender equality;”

“Deal effectively with **energy problems** in Africa, including through initiatives to:

(i) Establish and promote programmes, partnerships and initiatives to support Africa’s efforts to implement NEPAD objectives on energy, which seek to secure access for at least 35 per cent of the African population within 20 years, especially in rural areas;

(ii) Provide support to implement other initiatives on energy, including the promotion of cleaner and more efficient use of natural gas and increased use of renewable energy, and to improve energy efficiency and access to advanced energy technologies, including cleaner fossil fuel technologies, particularly in rural and peri-urban areas;”

NEPAD

- “Assist African countries in mobilizing adequate resources for their adaptation needs relating to the adverse effects of climate change, extreme weather events, sea level rise and climate variability, and assist in developing national climate change strategies and mitigation programmes, and continue to take actions to mitigate the adverse effects on climate change in Africa, consistent with the United Nations Framework Convention on Climate Change;”

NEPAD

- “Support African efforts to develop affordable transport systems and infrastructure that promote sustainable development and connectivity in Africa;”

Presentation Map



Resilient Economies
=
Bioregional economies





Bioregional economies

- Bioregional economies reflect the **capacities** and **limitations** of a particular ecosystems, honour the diversity and history of local cultures, and meet human needs as locally as possible.
- Bioregional economies are diverse, resilient, and decentralized.
- They minimize dependence on imports while focusing on high value-added exports.
- Paradoxically, this gives them an important competitive advantage in a global economy, allowing them to trade on favourable terms without sacrificing their economic sovereignty in the process



Bioregional economies

- Bioregional economies recognize the need for Fair Trade, refraining from importing or exporting goods produced unfairly or in an ecologically destructive manner
- Bioregional economies do not deplete their own Social Capital, Natural Capital, or Economic Capital.
- They export only their sustainable surplus, most often taking the form of intellectual property or high-value products and services rather than bulk commodities.



Bioregional economies

- Bioregional economies can have vastly different mixes of local foods, energy sources, building materials, land-uses - all responding to the possibilities of place. However, their underlying design principles are remarkably consistent.
- Bioregions need to reclaim a strong measure of economic sovereignty by becoming more self-sufficient and trading on their own terms. They can create economies that celebrate and mirror local ecosystems and cultures.

Possible Disaster Risk Reduction Strategy

(linking with KPA 3 of NDMF)

Taking into account:

- Basic Disaster Management fundamentals
- Sustainable development challenges
- Resilient economies imperatives

Step 1: Conduct a local "sustainability" assessment

(Current reality & Gap analysis as part of formal risk assessment process)

- Gather baseline information on hazards; vulnerability and capacity
- Gather all “sustainability” related information
- This information provides a baseline for measuring progress later

Step 2: Get "stakeholder" buy-in on launching a sustainability (integrated risk reduction) program

- Using the assessment from Step 1, build local support for a formal sustainability program,
- involving all people in the community, including elected officials; neighborhood, environmental and business groups; the media; churches; government agencies; foundations, etc.

Step 3: Designate a local sustainability champion

- To be successful, the community will need to designate at least one individual to become the champion of and conscience for sustainable development.
- This person should be sanctioned by the local elected leaders.

Step 4: Create a clear vision and objectives

- Engage the entire community in a "visioning exercise", defining where the community would like to be 20 years from now.
- The vision should be specific and idealistic, but achievable.

Step 5: Develop a roadmap for reaching the vision

- With the help of all stakeholders, identify what steps the community will need to take to achieve its vision.
- Assign who will have to do what.

Step 6: Develop sustainability indicators

- Based on the vision and roadmap, identify the "indicators" or yardsticks the community will use to measure progress.

Step 7: Incorporate sustainability into local policy

- Conduct a thorough "audit" of local policies to determine which advance sustainability and which stand in the way of progress.
- Remove policy barriers, and create policy incentives.

Step 8: Identify sources of help

- Determine what National, Provincial and private programs are available to assist the community in implementing its sustainability roadmap.
- Apply to those programs that advance the local goals.

Step 9: Carry out projects

- Start with "early success" projects to begin implementing the sustainability program, and involve the public in them.
- Celebrate successes with public events and recognition.
- Then take on more difficult goals and projects as public support and confidence builds.

Step 10: Check your progress

- Using the indicators, evaluate the community's progress every two years or so, and make adjustments as necessary.

Presentation Map



**Disaster
Risk**

=

HAZARD

X

VULNERABILITY

CAPACITY

**Resilient
Economies**

**Sustainable
Development**

Thank you