



**Living with climate risks in Africa –
the role of various actors
influencing change.**

Coleen Vogel

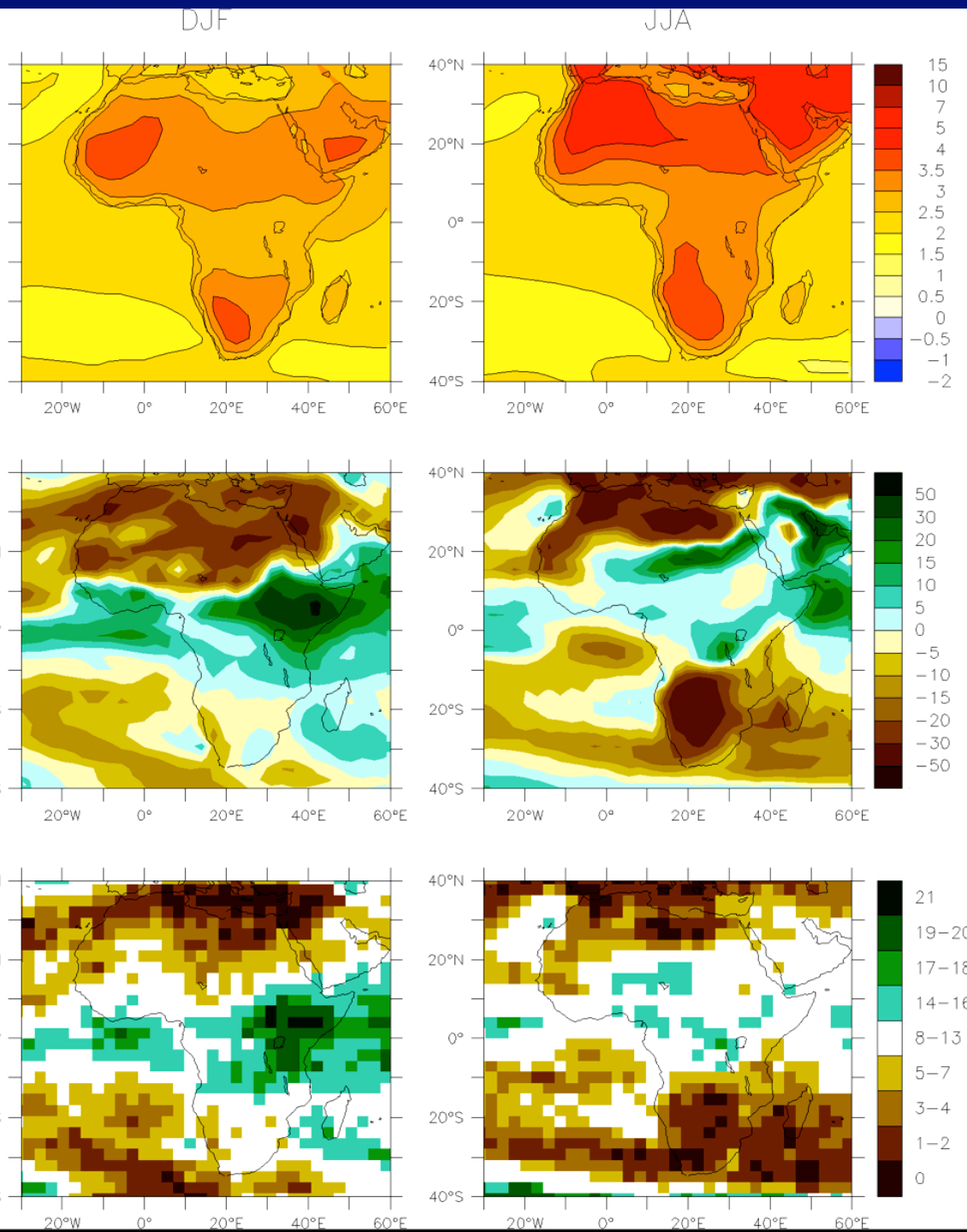
Africa

A mixed picture of uncertainty and agreement.

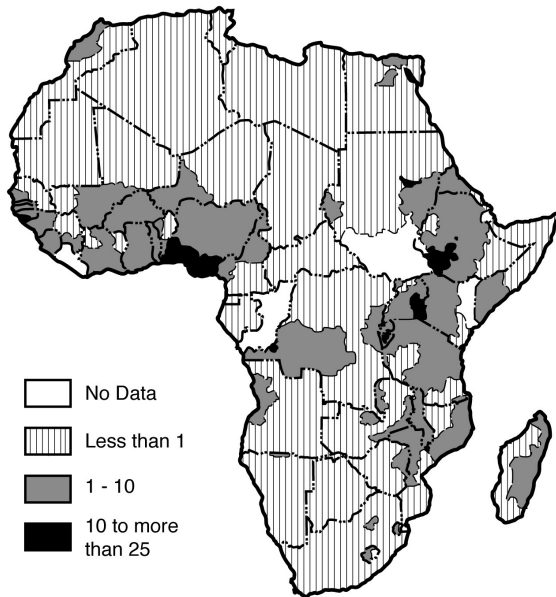
Regions of low consensus related in part to spatial positioning of boundaries of the climate processes

Average ΔT°

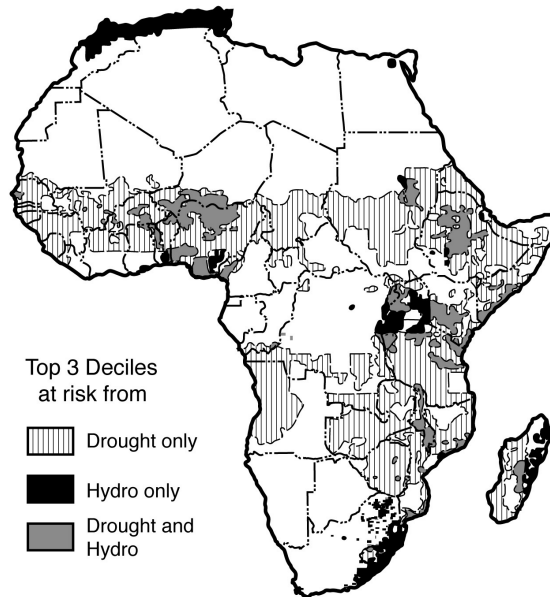
Average Δpreip (%)



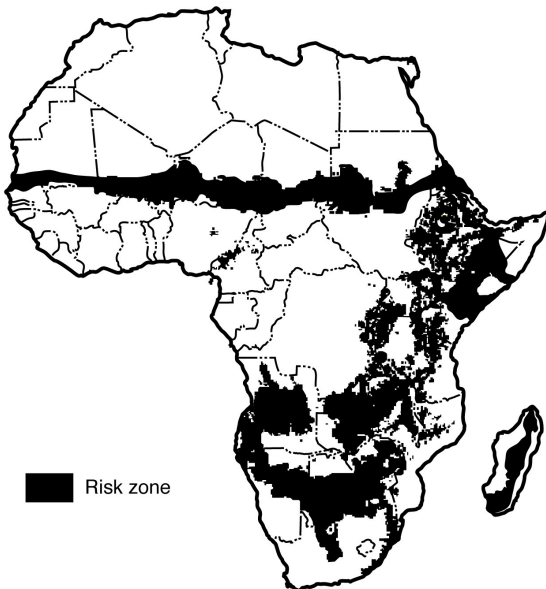
a) Underweight Children per square kilometre



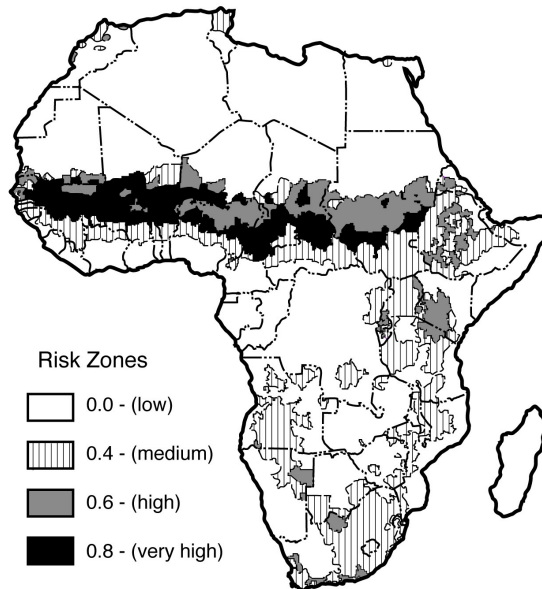
b) High Mortality Risk



c) Epidemic Malaria



d) Epidemic Meningitis



Vulnerability to climate change can be exacerbated by the presence of other stresses.

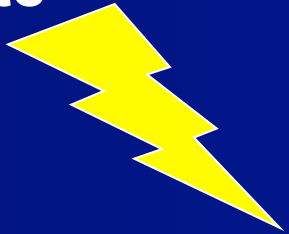
(Ch 9)

Vulnerability assessments

– trim tab or trap?

A: Impact Assessments

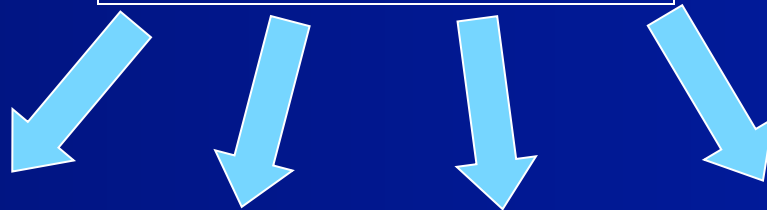
Climate
Event



Stressor



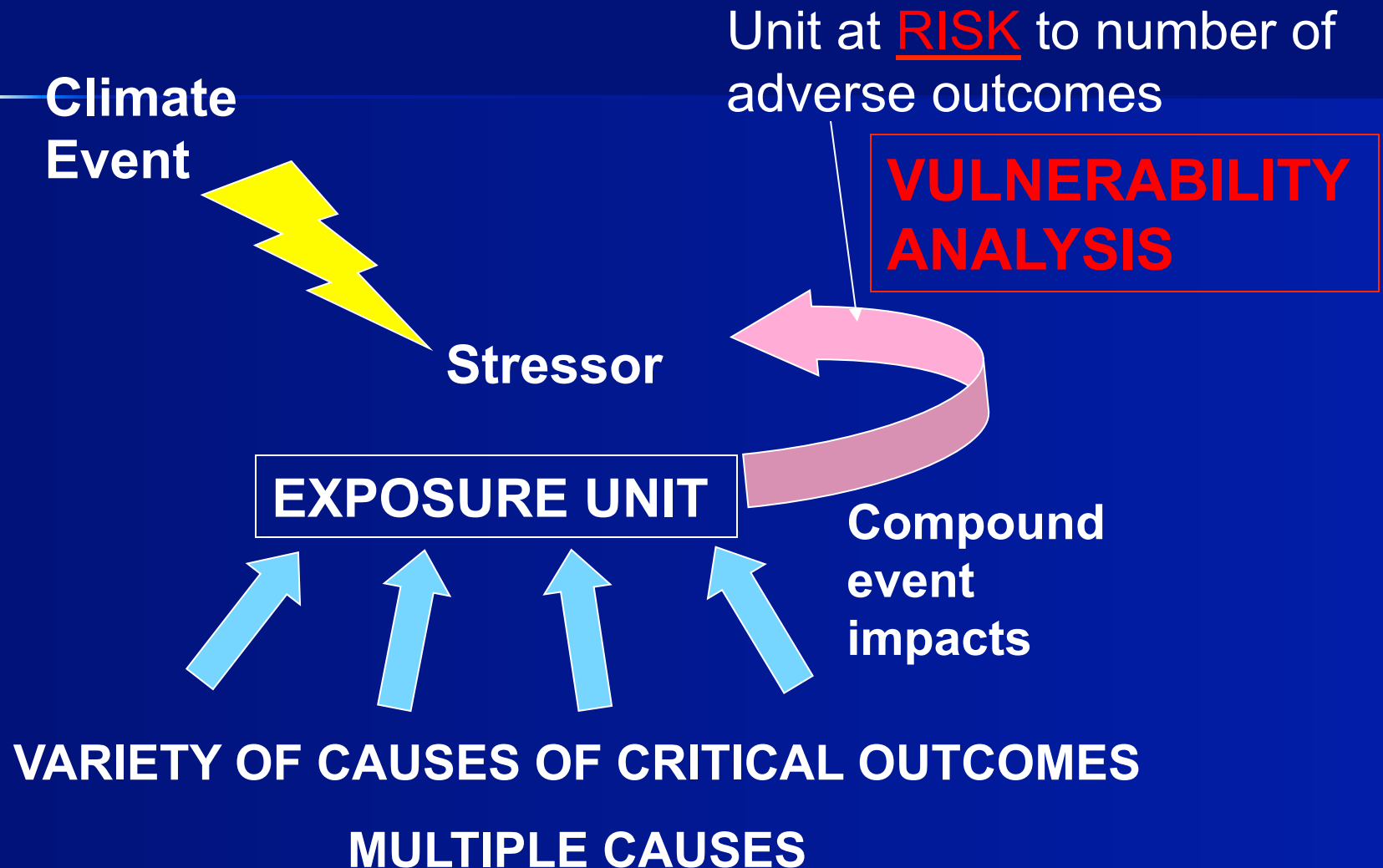
EXPOSURE UNIT



CRITICAL OUTCOMES AND DOWNSTREAM OUTCOMES

IMPACT

B: Vulnerability Assessments



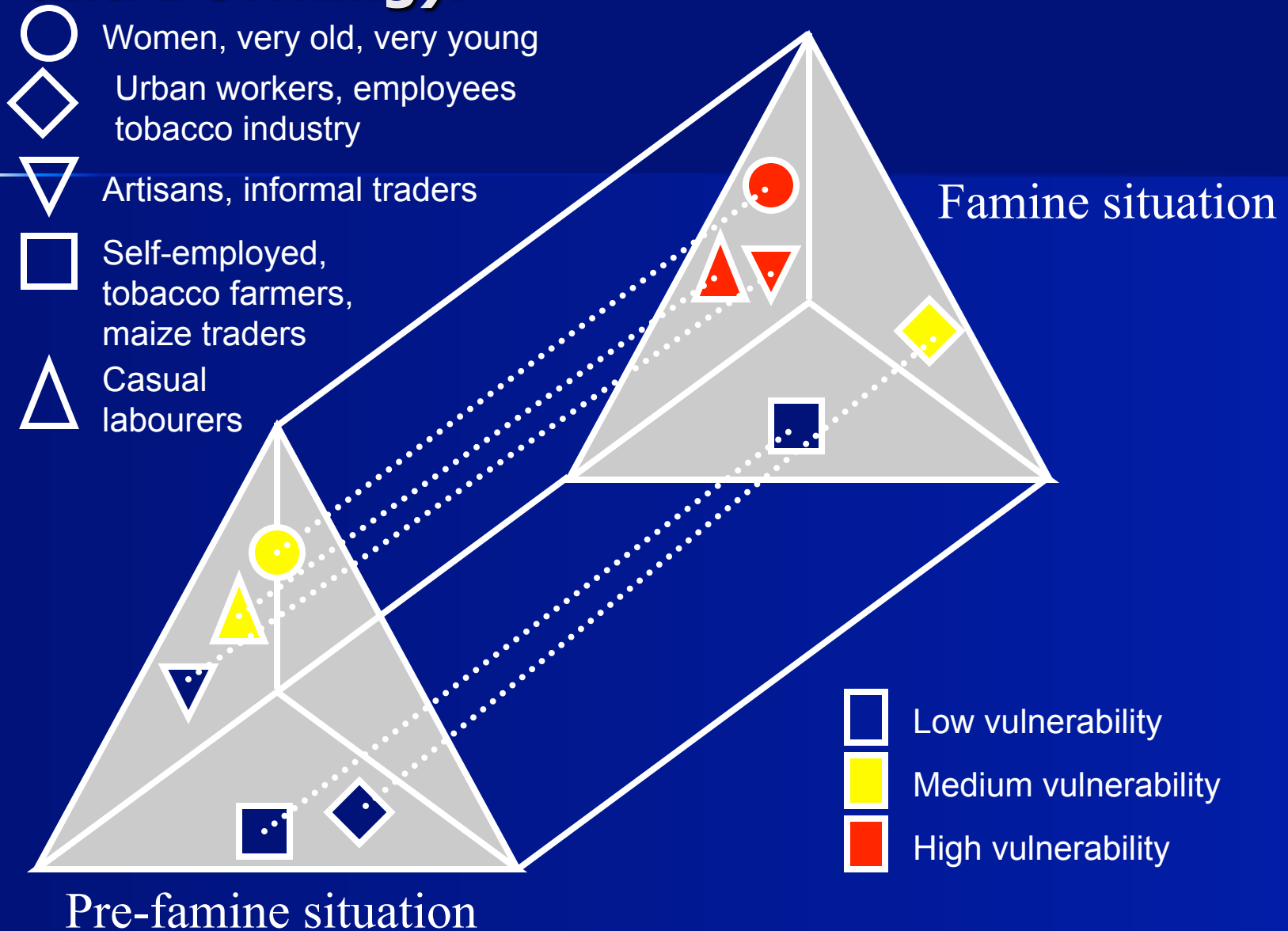
Vulnerability

- Defencelessness, insecurity (**internal vulnerability**); exposure to risk, shock (**external vulnerability**) (Chambers).
- The characteristics of a person or group in terms of their **capacity to anticipate, cope with, resist and recover from** impacts of a hazard (Blaikie *et al*).

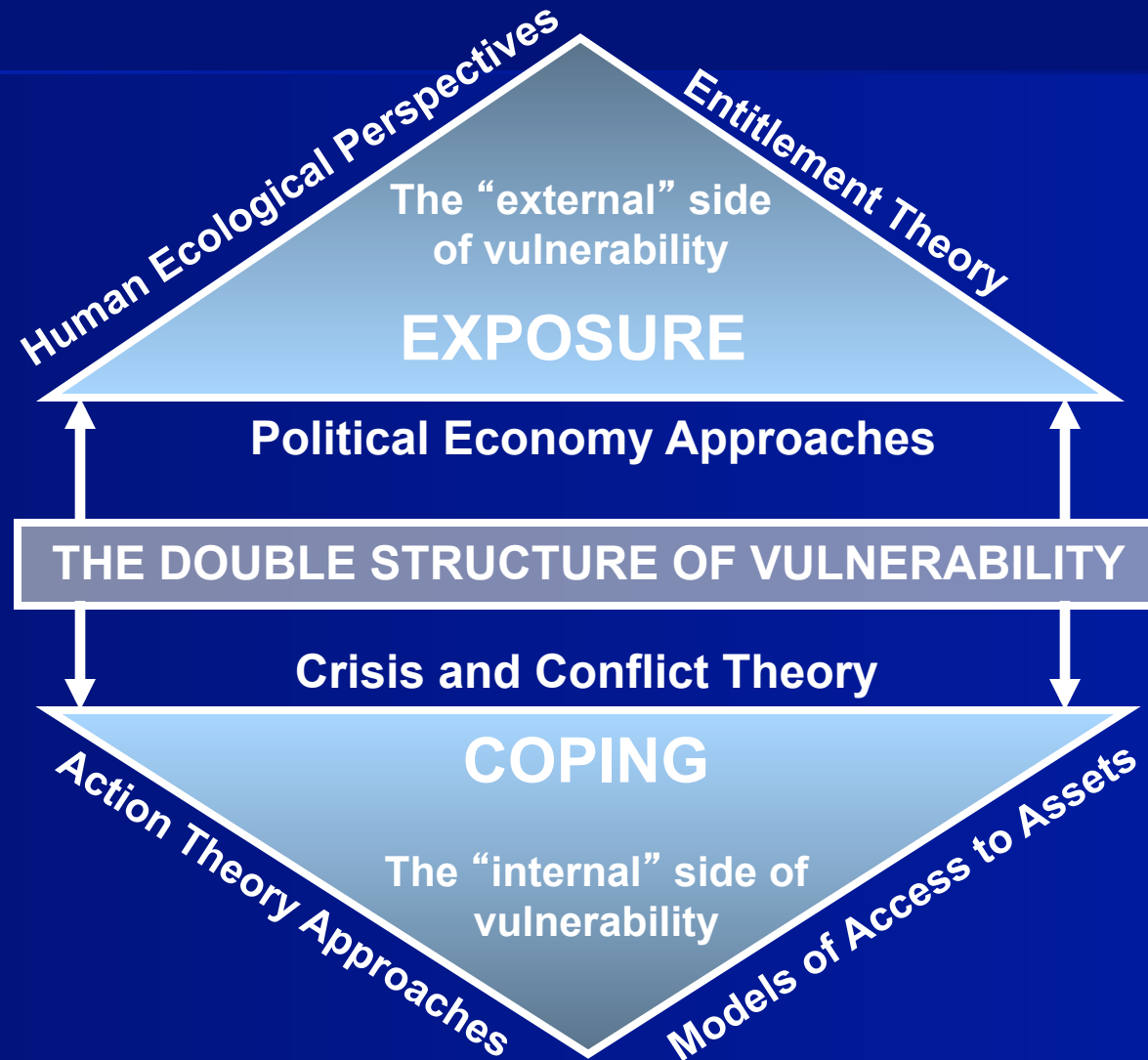
Approaches to vulnerability assessments

- Theoretical
- Sustainable Livelihoods Framework
- Disaster Management
- Humanitarian e.g. Food Economy Approach

The 1949 Malawi Famine (Watts, Bohle and Downing).

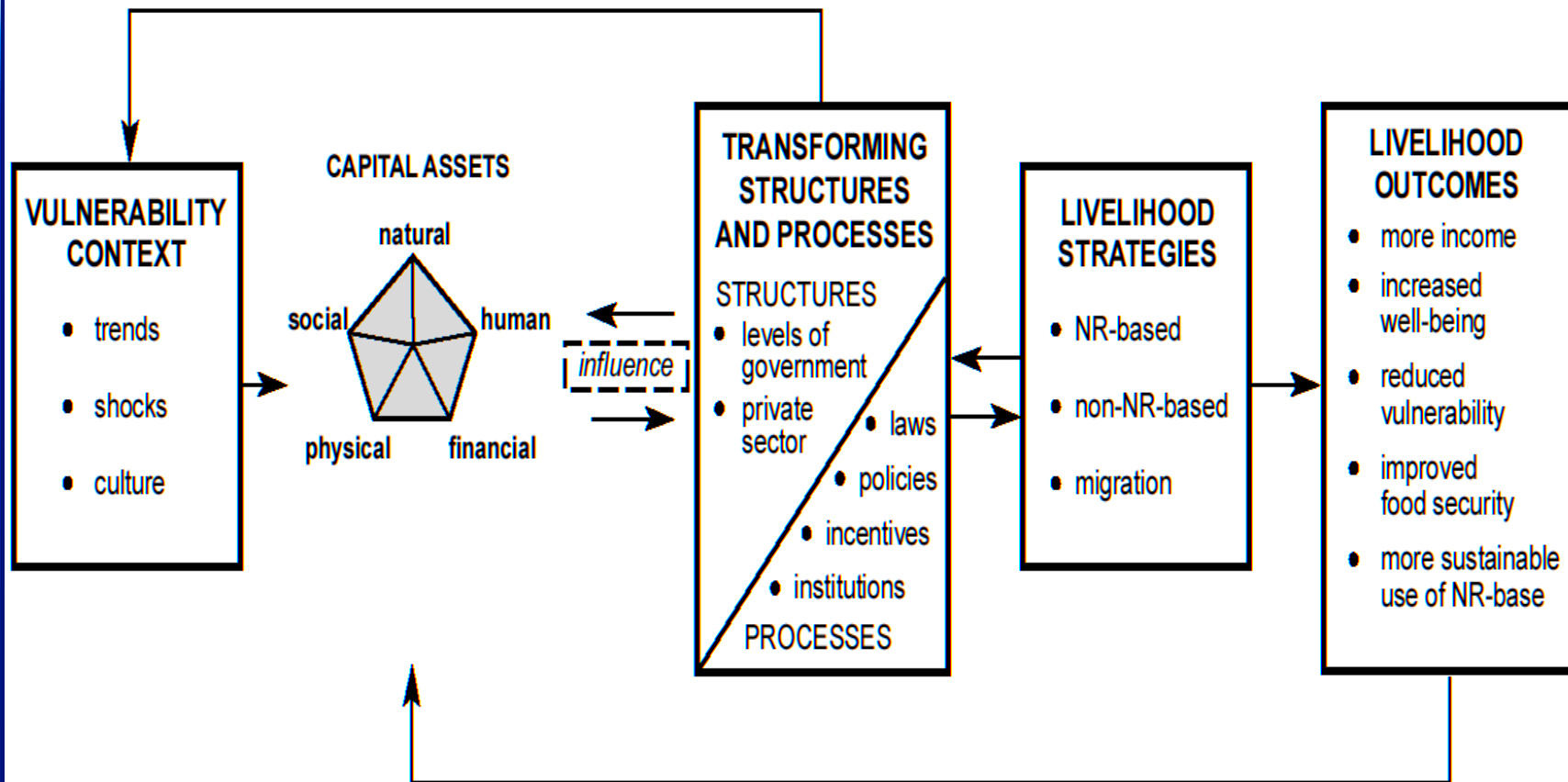


Double Structure of Vulnerability (After Bohle, 2001)

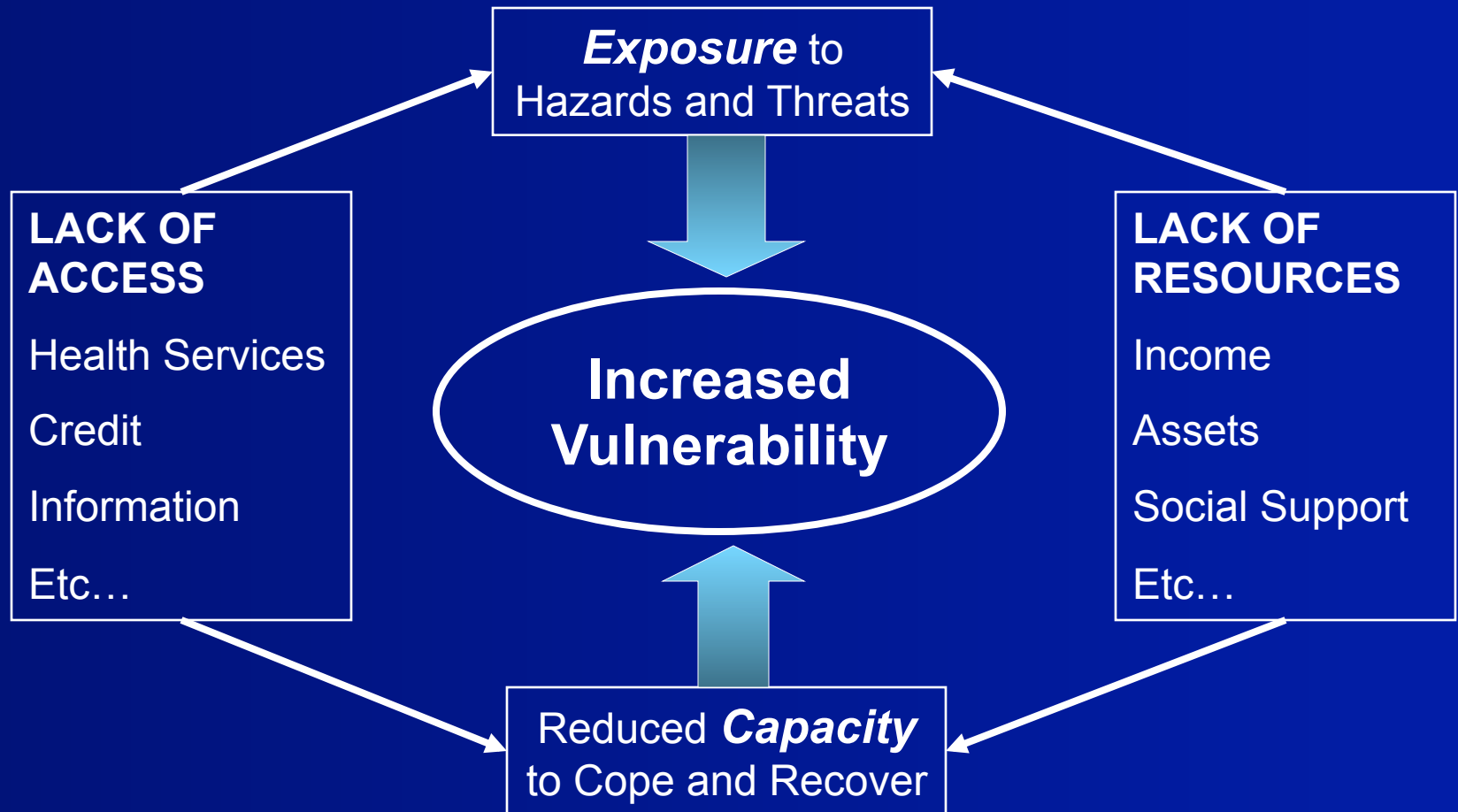


Sustainable rural livelihoods: Framework

(Source Carney, 1999)



Disaster Management and Vulnerability



Resilience/Resistance/ Persistence

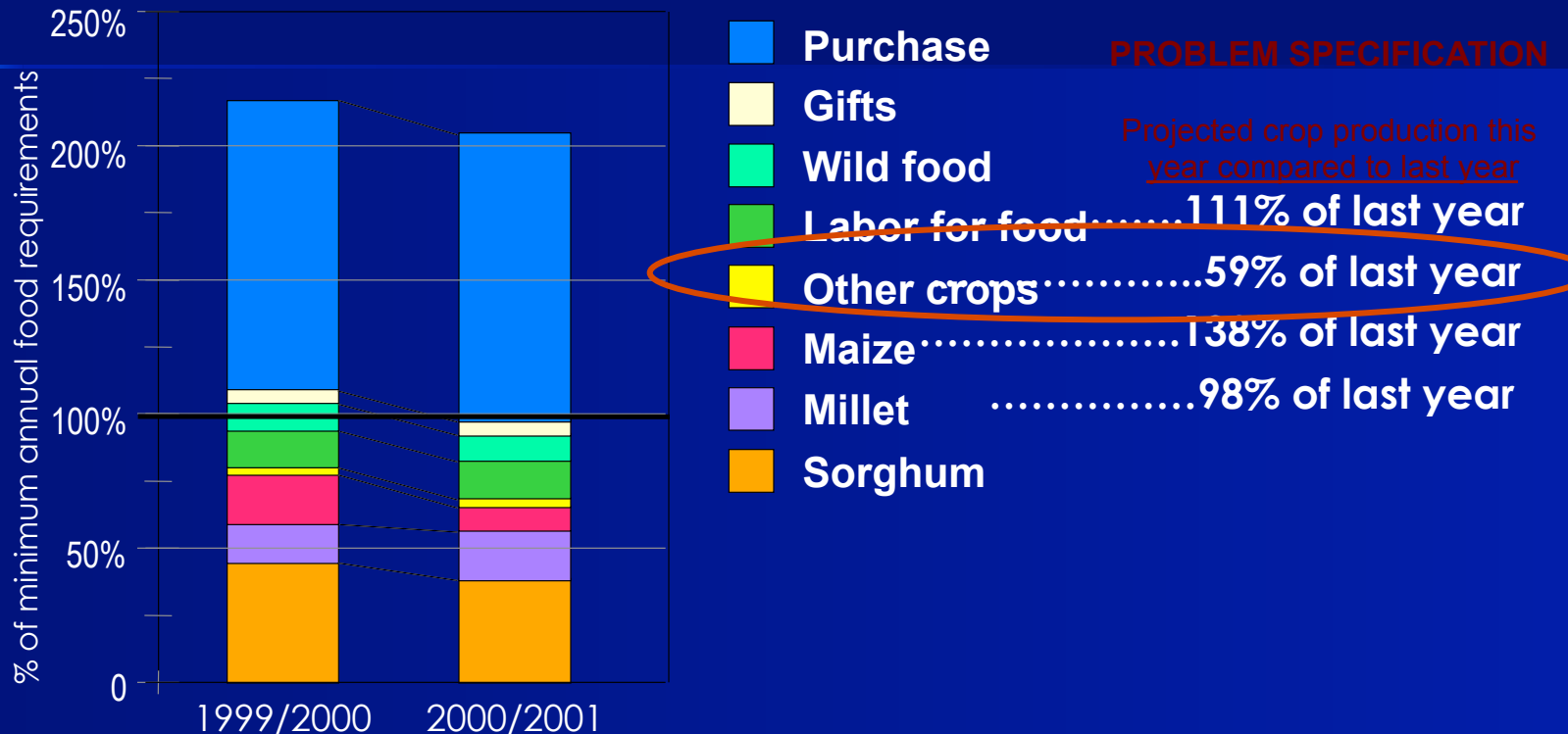
- Ability to withstand a shock/
perturbation
- Coping /adaptive capacity



Some approaches to vulnerability assessment

Income estimation	Incomes are estimates at various levels to determine if sufficient income was generated to purchase food. Large secondary data sets required.
Household modelling	Household food economy surveys done (how families obtain food and cash income for any given year) and how remittances contribute to family cash income. Areas/groups are identified that are vulnerable to acute hunger
Indicator approach	Subjective and objective indicators that are assumed to cover various aspects of vulnerability in a given area. Provides a relative measure of vulnerability in a given area. Provides a relative measure of vulnerability usually to at least the 3 rd administrative level.
Domestic Resource Capacity Approach	Direct measure of vulnerability. Measure of capacity as well as vulnerability (coping in terms of incomes and assets)

The Siavonga Valley in Zambia experienced poor rainfall during the 2000/2001 cropping season leading to a 40% drop in maize production compared to last year. Government plans to provide food assistance.



The vulnerability assessment shows that maize is not an important source of food in the Siavonga Valley. Therefore a 40% drop in maize production alone, will not put households at risk of food insecurity.

A food aid intervention in this situation is not appropriate (source; Fews, 2003)

Who is using vulnerability assessments in Africa?

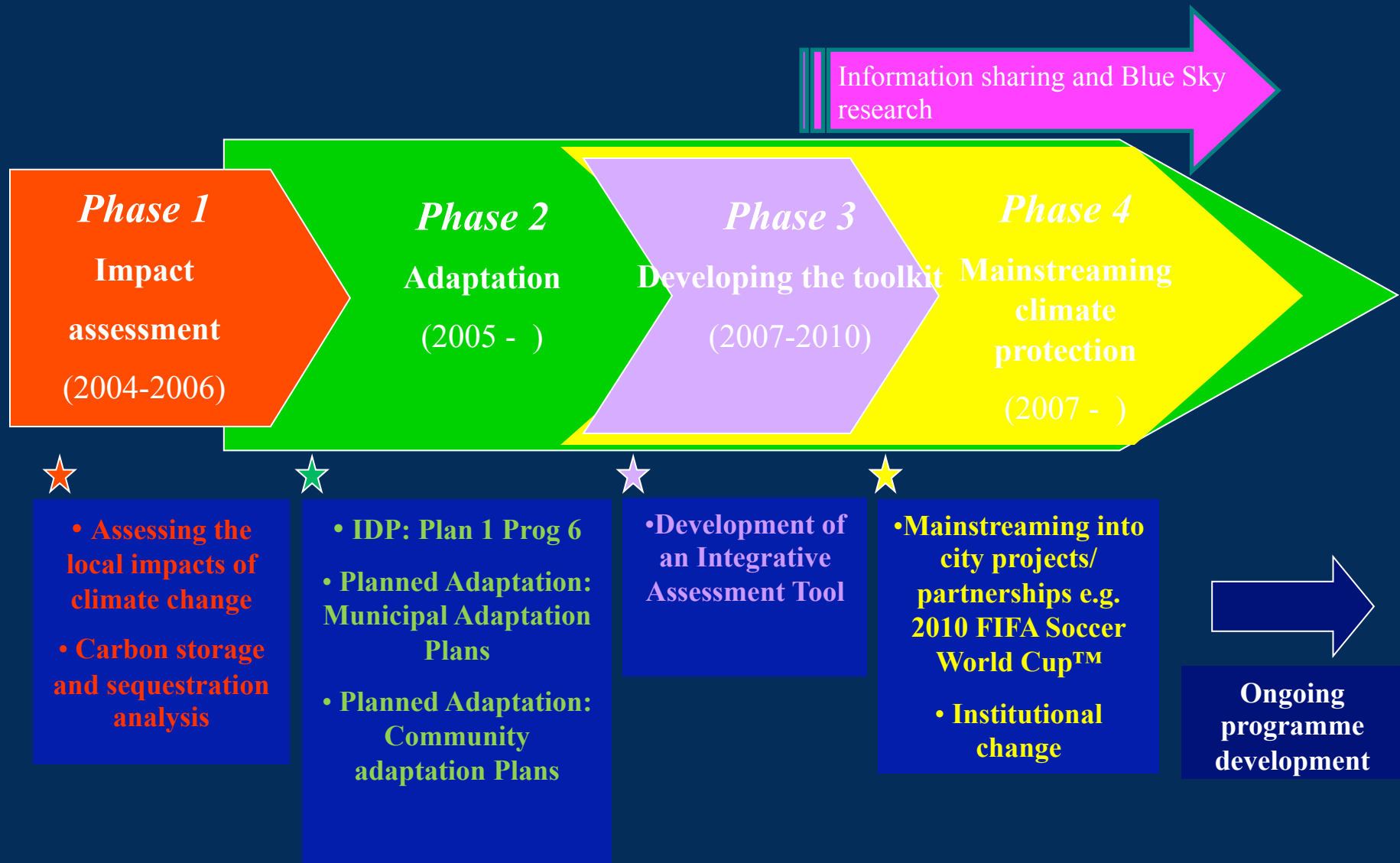
- **Humanitarian efforts**
- *Save the Children*
- *Oxfam*
- *Care*
- *World Food Programme*
- *FEWS*
- *FAO*
- **Regional Vulnerability Assessment Committees (RVACS) etc.....**
- **Climate scientists**
- **Development practitioners and planners**
- **Disaster managers**

Persistent Dilemmas -

- Development needs high
- Well-meaning aid
- Static and not dynamic assessments
- Vulnerability assessments good for local, case-based problems BUT
- ‘Babylonian confusion’ use of vulnerability indicators (Hinkel 2010)
- Can lock one into ‘coping’ cycle and not adaptation – ‘adaptive capacity’ thinking.

**Local level adaptation,
connecting with planners -
Trim Tab or Trap ?**

Municipal Climate Protection Programme (MCPPE)



Durban Adaption Charter

- Resulting from recent COP held in Durban
- ICLEI together with City of Durban convened an event from which an international adaptation charter emerged to build local level adaptation at the city level.
- Over 100 mayors and some 950 local leaders signed up.

Urban flooding in context

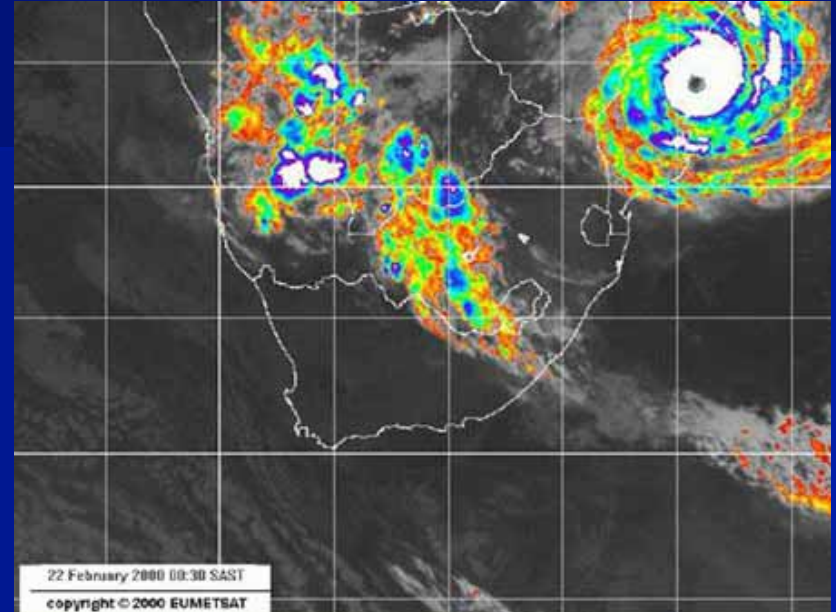
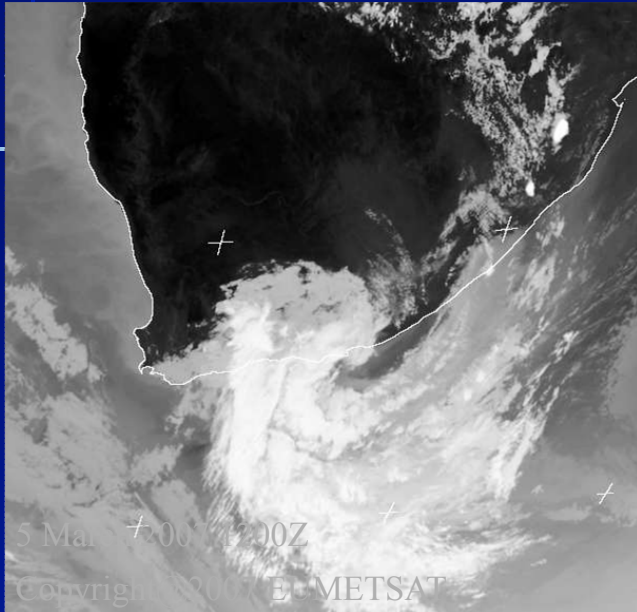
“For cities, perhaps the most obvious increased risk comes from the likely increase in the number and intensity of extreme weather events such as heavy rainstorms”

(Satterthwaite et al, 2007, 17)



*A taxi swept into a river in Soweto, February 2009
(www.sabcnews.com, 2009)*

Important rain producing weather systems of South Africa



How may these systems change in a future climate as a result of global warming?

- Frequency increase or decrease?
- Intra-annual variability
- Extreme rainfall events
- (contact Francois Engelbrecht, CSIR).

Being honest brokers -

- Some recent 'toolkits' :
- Science – issue presented, in some cases, as a greenhouse gas problem only, little attention to natural forcing
- Use of words 'predictions' not 'projections' – raising expectations
- No suite of options provided (envelope of scenarios) but rather prescriptive – downscaling starting point.

**AND SO WHAT? – WHAT
MORE MAY BE NEEDED?**

Some suggested ways going forward

- Need a 'sensitive' way of building from what we know – do not forget lessons learnt but we do need a paradigm shift, or at least beginning a serious conversation.
- More of the same, 'business as usual approach' not sufficient.
- Green economy debates, transition discussions possible entry pts?
- Transformative education.

Beginnings of a transformative education agenda

“For citizens to address the complex problems of modern society, educators must help learners to:

- develop higher level skills **meta-cognition**, or thinking about thinking);
- 2) **meta-knowledge** (knowledge about the nature and limitations about knowledge);
- 3) **meta-learning** (learning how to learn); and
- 4) **meta-dialogue** (about how we engage in dialog) (Willow-Dea, 2011, 29-30 and Murray, 2008)”.

Personal role as 'trim tab' in education

- Curriculum design – preparation of exemplars for teachers to use
- Training of teachers, trainers
- Teaching in a local school – simple scenario work as an intro into climate change
- Working with government on skill sectors
- Curriculum change post-grad level

Some examples of other educators as trim tab networks

- **CCAA – Climate Change Adaptation in Africa** (46 research and capacity building efforts in 33 countries Africa) (IDRC and DFID).
- **TRECC Africa – Intra – ACP (European Commission – Africa, Caribbean and Pacific group of states)** mobility programme – 80 post grads from 6 leading African universities (consortium with leadership from e.g. Stellenbosch Univ). Focus on climate change adaptation and natural resource use.
- **ACCAI – African Climate Change Adaptation Initiative** - Open Society Foundations.
- Emphasis in the last two on a transdisciplinary approach.

■ In order to adapt to climate change and climate variability:

- Acknowledge the link between climate and other stressors
- Engage in the social sciences and with other practitioners
- The role of honest knowledge brokers

■ Adaptation to climate change provides an opportunity to

- Bring different knowledge communities together
- To engage in debate around adaptation, networks, co-production of knowledge and learning

Calls for additional thinking !

- “The time is ripe for seriously re-evaluating existing models and approaches. How have existing institutions conceptualized the roles of technical experts, decision makers and citizens with respect to assessing and application of knowledge? ” (Jasanoff, 2003, *Minerva*, 4, 226).