



Inter-Disciplinary Study for Disaster Risk reduction - toward enforcing risk management" from the view point of African countries

Shuaib Lwasa

Department of Geography Geoinformatics and Climatic
Sciences

Makerere University

Email: lwasa_s@caes.mak.ac.ug



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Outline

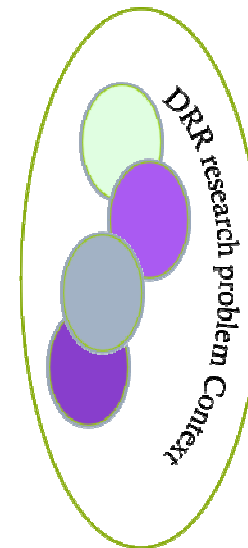
- ◆ Recapping Inter-disciplinary Research
- ◆ Summary status of disaster risk reduction in Africa
- ◆ Towards disaster risk management
 - ◆ Case studies
- ◆ The role of Coordination
- ◆ Concluding remark

Understanding Inter-disciplinary study

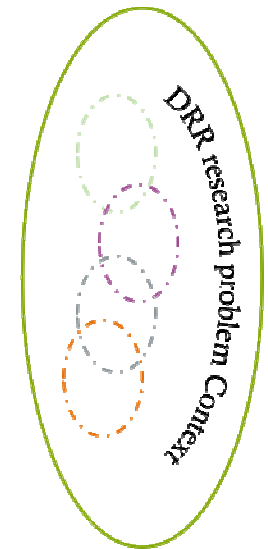
- ◆ Multi-disciplinary divisions become porous
 - ◆ Partnership
 - ◆ Dialogue
 - ◆ Hybridization
 - ◆ Complementarity
- ◆ Heuristic tool for finding out process of searching rather than an emphasis on finding
- ◆ Iterative procedurally repetitive messy, not linear fluid
- ◆ Reflexive self conscious of disciplinary or personal bias



Multi-disciplinary



Inter-disciplinary



Trans-disciplinary

Source: Pohl and Hirsch et al 2007

Status of disaster risk reduction in Africa

◆ Risk Knowledge

- ◆ Increasing disasters and increasing need for knowledge
 - ◆ Root causes of disasters
 - ◆ Interrelationship among disasters
 - ◆ Reducing risk but rising loss and damages



THE INTERGOVERNMENTAL AUTHORITY ON DEVELOPMENT
PEACE, PROSPERITY AND REGIONAL INTEGRATION

◆ Governance structures and institutions established

- ◆ Coordination units and departments/directorates
- ◆ Regional, national to local level systems (IGAD)



◆ Risk management units and infrastructure established

- ◆ From preparedness committees to DRM units, infrastructure and human resource



ECOWAS EARLY WARNING
ALERTE PRECOCE DE LA CEDEAO
ALERTA PRECOCE DA CEDEAO





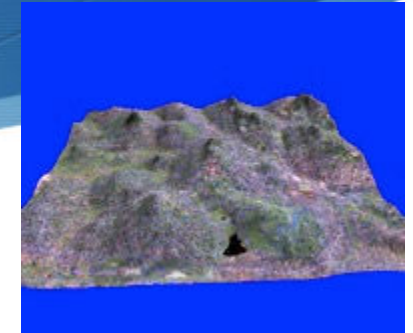
The disaster risk challenge and profile in Africa



Largely slow-onset disasters



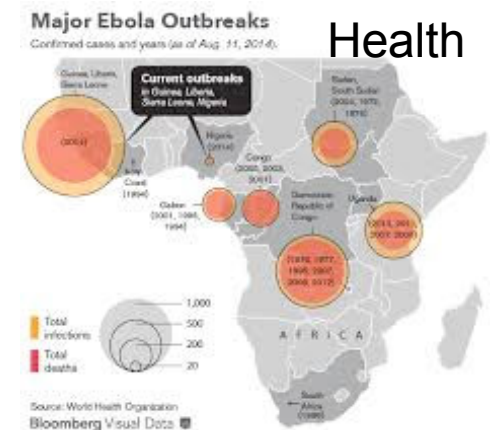
Sudden-Onset disasters



Processes and triggers of disasters



Runaway cities and LECZ risks



Imperatives for augmented inter-disciplinary study

- ◆ Need for knowledge regarding underlying causes
- ◆ Profile characterized by largely slow onset disasters
- ◆ Impacts, loss and damage
- ◆ Disaster governance and management



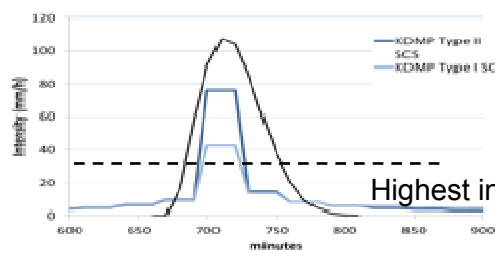
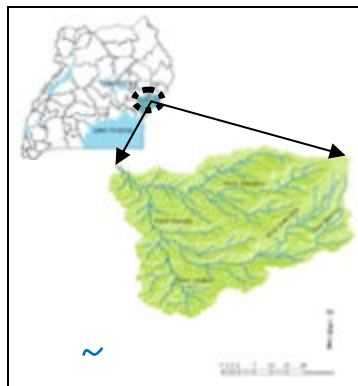
Some examples



High temporal resolution weather data



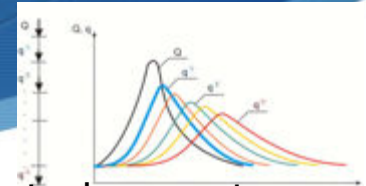
Surface, socio-economic conditions



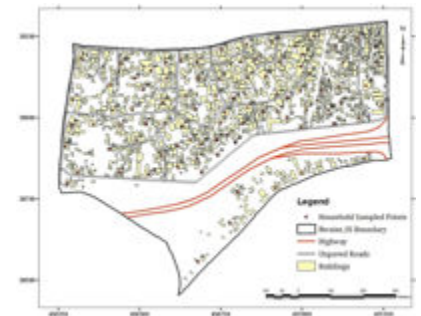
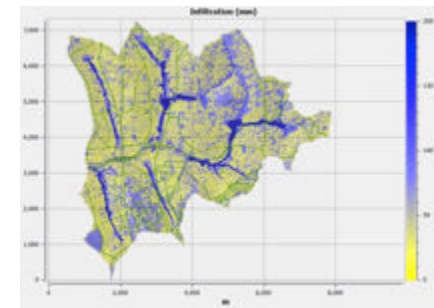
Hydrology data

Spatial cascade of disasters

Source: Sliuzas et al 2013



Hydrological scenarios



Towards disaster risk management

Case studies

- ◆ Mozambique
 - ◆ Cyclone and storm surges
 - ◆ River delta flooding

- ◆ Uganda
 - ◆ Flooding in Kampala
 - ◆ Landslides in mountainous region



Mozambique: Dealing with Floods

Integrated Assessment

Integrated Solutions



Figure 14: Model of cyclone-proof house



Figure 9: housing low-cost solution for "living with floods"



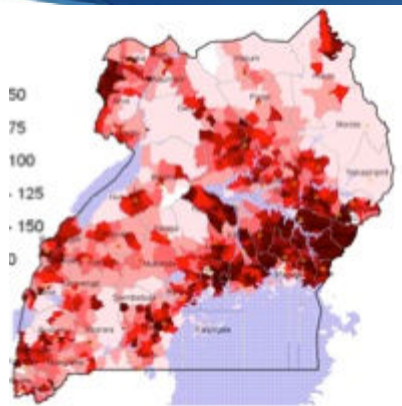
River delta floods
Cyclone and storm surges
Mangrove restoration for protection



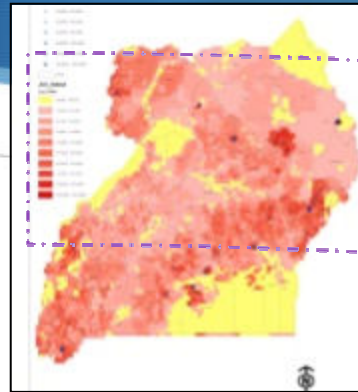
Source: UN-Habitat SU, Net 2009



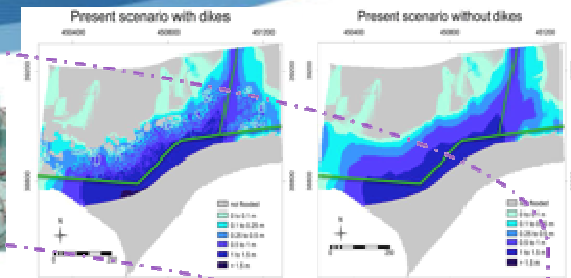
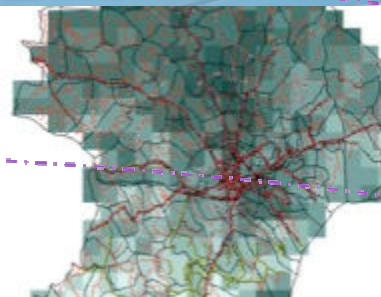
Inter-disciplinary studies for flood management in Uganda



Population distribution



Integrated vulnerability assessment



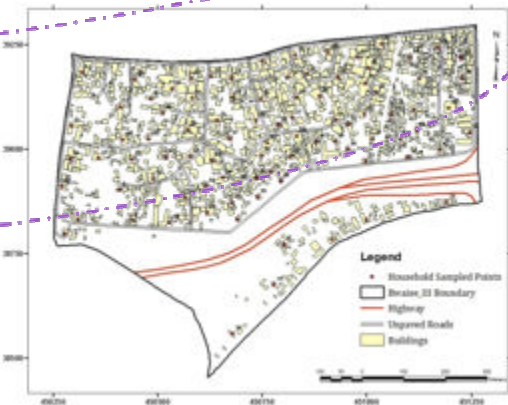
Flood modeling



Scenarios, planning for preparedness



Integrated data analysis



Landslides in Uganda

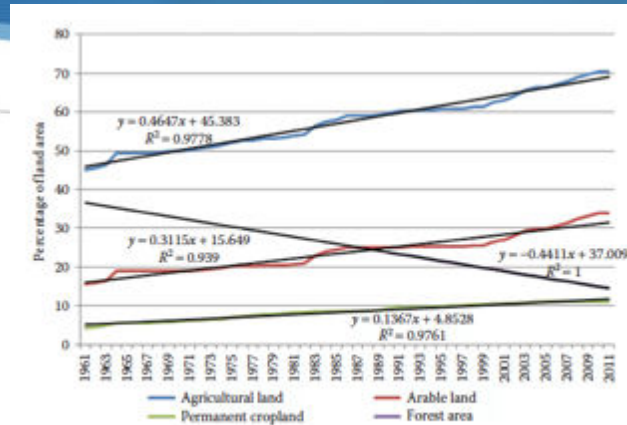


FIGURE 2.5 Trends in the percentage coverage of agricultural land and forest cover, 1961–2011. (Data from the World Bank Portal.)

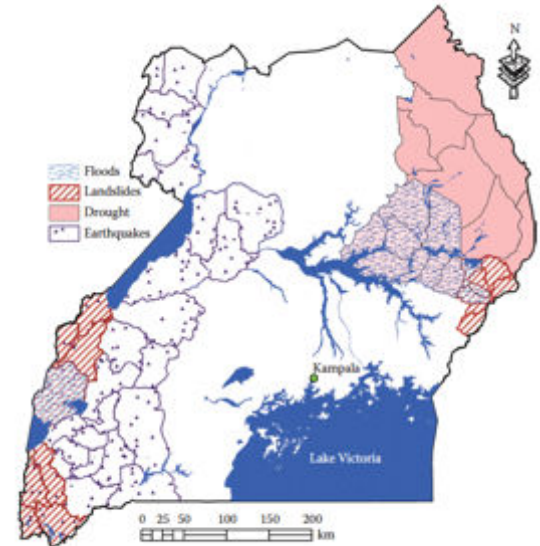


FIGURE 2.4 Spatial coverage at the district level of prominent disaster-inducing natural hazards in Uganda.

Landslides;- exposed hilly are; claim lives; destroy crops; livelihoods



6/12/2011										
	A	B	C	D	E	F	G	H	I	J
1	Date	Time	Temp Out	HI Temp	Low Temp	Hum Out	Dew Pt.	Wind Speed	Wind Dir	Wind Run
2	6/12/11	6:30 AM	13.8	13.8	13.7	99	13.6	0	0	0
3	6/12/11	7:00 AM	14.5	14.5	13.8	99	14.3	0	0	0
4	6/12/11	7:30 AM	15.8	15.8	14.5	99	15.7	0	0	0
5	6/12/11	8:00 AM	17.3	17.3	15.8	97	16.8	0	0	0
6	6/12/11	8:30 AM	19.2	19.2	17.3	89	17.4	0	0	0
7	6/12/11	9:00 AM	21.1	21.1	19.2	78	17.1	0	0	0
8	6/12/11	9:30 AM	23	23	21.1	66	16.3	0	0	0
9	6/12/11	10:00 AM	24.3	24.3	23	62	16.5	0	0	0
10	6/12/11	10:30 AM	24.3	24.4	24.3	65	17.3	0	0	0
11	6/12/11	11:00 AM	24.8	24.8	24.3	67	18.2	0	0	0
12	6/12/11	11:30 AM	24.4	24.9	24.3	69	18.3	0	0	0
13	6/12/11	12:00 PM	23	24.4	23	73	17.9	0	0	0
14	6/12/11	12:30 PM	21.8	23	21.8	84	19	0	0	0
15	6/12/11	1:00 PM	20.3	21.7	20.3	91	18.8	0	0	0
16	6/12/11	1:30 PM	20.6	20.6	20.3	91	19	0	0	0
17	6/12/11	2:00 PM	20.2	20.6	20.2	92	18.9	0	0	0
18	6/12/11	2:30 PM	20.2	20.2	20.2	93	19.1	0	0	0
19	6/12/11	3:00 PM	19.9	20.2	19.8	93	18.7	0	0	0
20	6/12/11	3:30 PM	20.6	20.6	19.9	92	19.3	0	0	0
21	6/12/11	4:00 PM	21	21	20.6	92	19.6	0	0	0
22	6/12/11	4:30 PM	21	21.1	20.9	91	19.5	0	0	0
23	6/12/11	5:00 PM	20.1	21	20.1	93	18.9	0	0	0
24	6/12/11	5:30 PM	19.2	20.1	19.2	94	18.2	0	0	0
25	6/12/11	6:00 PM	18.6	19.2	18.6	96	18	0	0	0

The role of coordination

- ◆ Institutional coordination
 - ◆ Co-design and co-production of knowledge
- ◆ Enhancing capacities in inter-disciplinary study of DRR
 - ◆ Periperi-U network and African grown and groomed DRR studies
 - ◆ UNEDRA University network in East Central Africa
- ◆ Transformation of education at institutions of higher learning towards integrated approaches
 - ◆ Continued coordination with Government agencies and units



Concluding Remarks

- ◆ Integrative DRR studies getting for prominent in Africa
- ◆ Inter-disciplinary studies and production of credible, readily usable information
- ◆ Inter-disciplinary study of DRR informing the spatial cascade of disasters
- ◆ Coordination between knowledge generators and knowledge users

