Responsiveness of national action plans to disaster risk predictors in Africa

Emmanuel Eze[1,2,3] and Alexander Siegmund[1,2]

[1]Institute of Geography & Heidelberg Center for the Environment (HCE), University of Heidelberg
[2]Department of Geography, Research Group for Earth Observation (rgeo), UNESCO Chair on Observation and Education of World Heritage & Biosphere Reserve, Heidelberg University of Education
[3]Department of Social Science Education, Geographical and Environmental Education Unit, University of Nigeria

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Emmanuel Eze [1,2,3*] and **Alexander Siegmund** [1,2]

[1]*Institute of Geography & Heidelberg Center for the Environment (HCE), University of Heidelberg, Heidelberg, Germany*
[2]*Department of Geography – Research Group for Earth Observation (rgeo), UNESCO Chair on Observation and Education of World Heritage & Biosphere Reserve, Heidelberg University of Education, Heidelberg, Germany*
[3]*Geographical and Environmental Education Unit, Department of Social Science Education, University of Nigeria, Nsukka, Nigeria*
emmanuel.eze@stud.uni-heidelberg.de; siegmund@ph-heidelberg.de | *presenting author*

The United Nations Agenda 2030 and Sendai Framework, as well as African Union's Agenda 2063, are targeted at human peace and prosperity amidst environmental and economic sustainability. These frameworks contain goals for the earth's protection and human poverty/disaster risk reduction. The foremost priority of the Sendai Framework for Disaster Risk Reduction is the increased understanding of disaster risk and strengthening its governance and management. Three overarching questions warrant this study: what are the important predictors of disaster risk in the vulnerable continent of Africa? How does disaster risk relate to climate change literacy and people's beliefs in Africa? Do national action plans respond appropriately to key factors reflecting Africa's disaster risk? This study uses the climate change literacy and belief data from the Afrobarometer and disaster risk data from the Index for Risk Management (INFORM) of the European Commission. Using disaster risk index as the dependent variable and 30 independent variables, the important predictors contributing to disaster risk in all African countries were identified using random forest machine learning models. Essential variables in the model include projected conflict risk, current highly violent conflict intensity, uprooted people, other vulnerable groups, governance, physical infrastructure and access to health care, among others. Also, The higher the percentage of African countries' population that is climate literate, the lower the disaster risk. Conversely, the higher the climate change literacy of the population, the higher the percentage of people who believe that people can do little about climate change. Furthermore, 25 policies of countries with very high disaster risk were analysed. Within these selected policies, concepts related to violent conflicts were the least included, while those about vulnerability factors were the most included. Policies explored included more vulnerability concepts and much fewer hazard (violent conflict) concepts indicating the least responsiveness to hazards. The study provides a deeper understanding of disaster risk in Africa by showing essential factors and offers insight into disaster risk governance in line with the Sendai Framework.

Keywords: Africa, disaster risk drivers, disaster risk reduction, human hazards, lack of coping capacity, natural hazards, violent conflicts, vulnerability

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INFORM disaster risk class
- Very low
- Low
- Medium
- High
- Very high

0 500 1,000 2,000 Kilometers
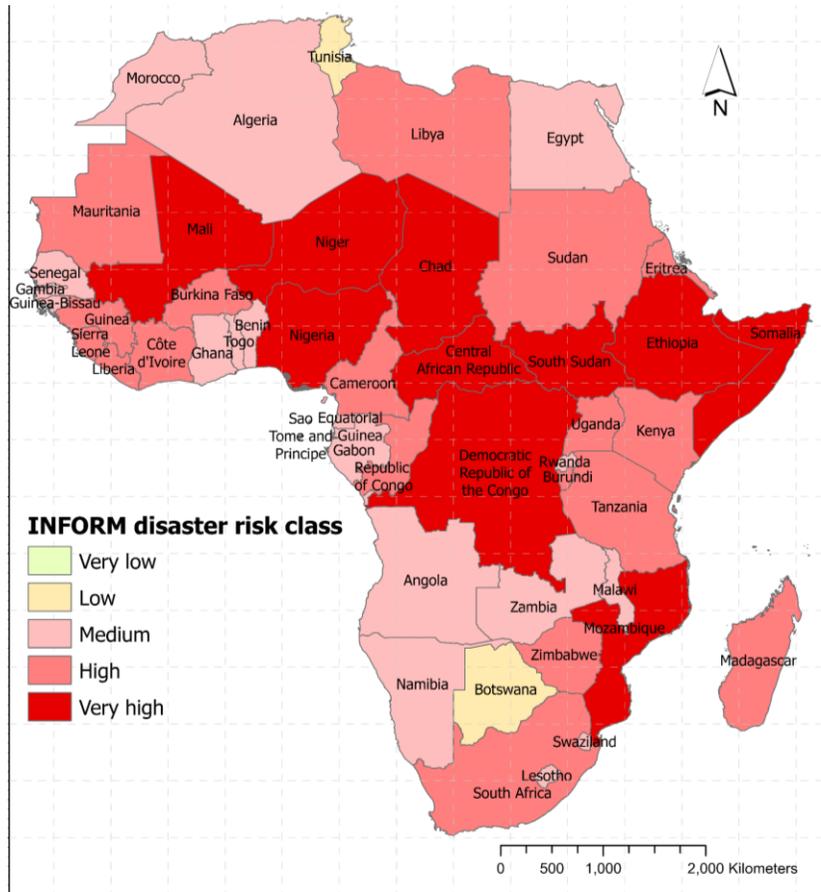
Emmanuel Eze

Alexander Siegmund

Heidelberg University & Heidelberg University of Education, Germany
Department of Geography, Research Group for Earth Observation – ʳgeo

✍ *emmanuel.eze@stud.uni-heidelberg.de*

This study investigated the inclusion of key predictors of disaster risk in Africa with selected policy documents

	Disaster risk: important variables
	Risk index, climate literacy & belief of Africans
	Content analysis of policy documents
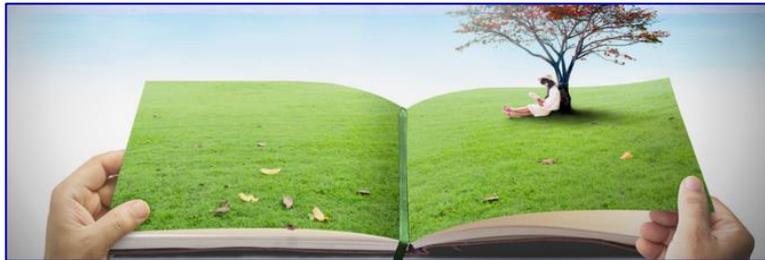
INFORM Disaster Risk Index: variables

HAZARDS
- **Natural**
  - ✓ *Earthquake*
  - ✓ *Flood*
  - ✓ *Tsunami*
  - ✓ *Tropical Cyclone*
  - ✓ *Drought*
  - ✓ *Epidemic*

- **Human**
  - ✓ *Projected Conflict Risk*
  - ✓ *Current Highly Violent Conflict Intensity*

VULNERABILITY
- Socio-Economic Vulnerability
- Development & Deprivation
- Inequality
- Economic Dependency
- Vulnerable Groups
- Uprooted people
- Health Conditions
- Children U5
- Recent Shocks
- Food Security

LACK OF COPING CAPACITY
- Institutional
- DRR
- Governance
- Infrastructure
- Communication
- Physical infrastructure
- Access to health care

Disaster risk factors are mostly related to lack of coping capacity and vulnerability.

Only human hazards are important predictors.

HAZARDS

VULNERABILITY

ADAPTIVE CAPACITY
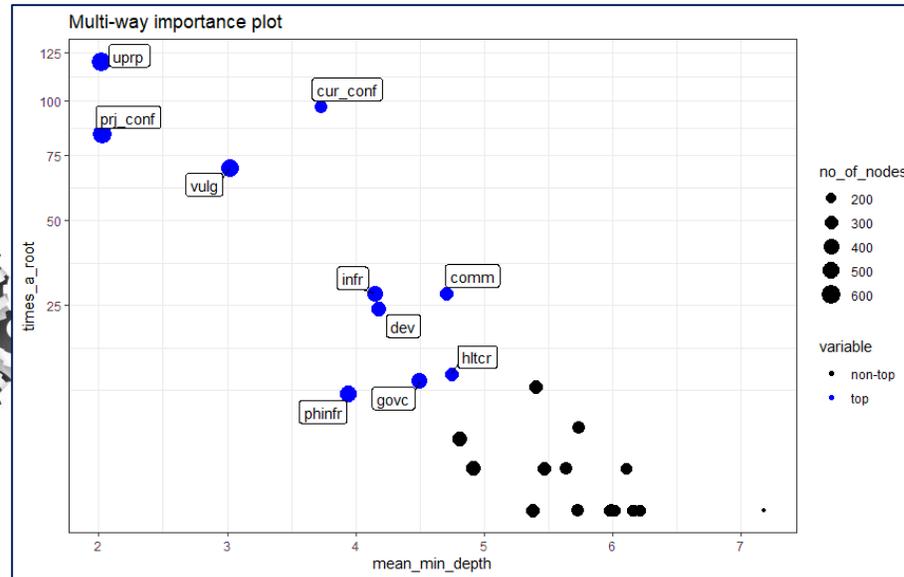
HAZARDS
- Conflicts
- *(current & projected)*

VULNERABILITY
- Uprooted people
- Vulnerable Groups
- Development & Deprivation

LACK OF COPING CAPACITY
- Governance
- Communication
- Physical infrastructure
- Access to health care

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Outline | **Risk factors** | Risk, literacy & belief | Content Analysis | Department of Geography – ʳgeo | Eze & Siegmund

African countries with higher climate literacy have lower disaster risk.
They also believe that ordinary people can do a little to address climate change.
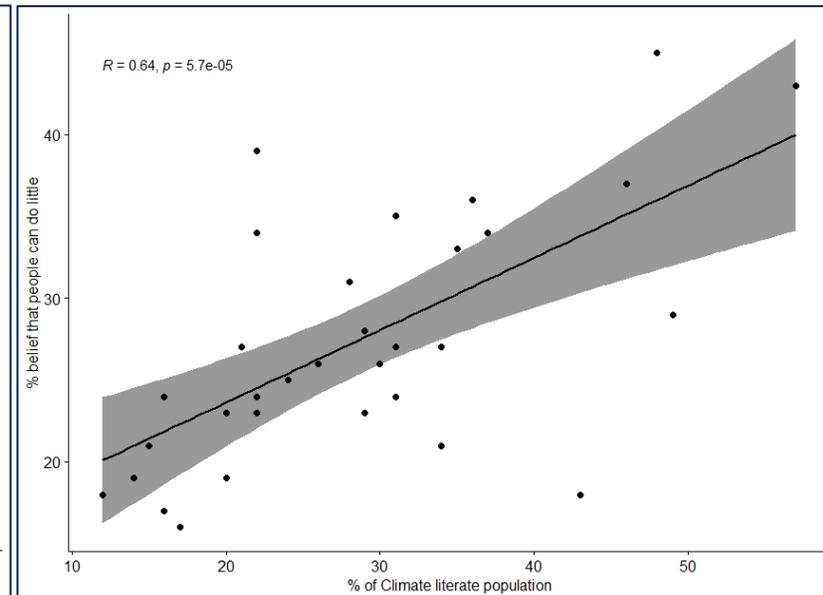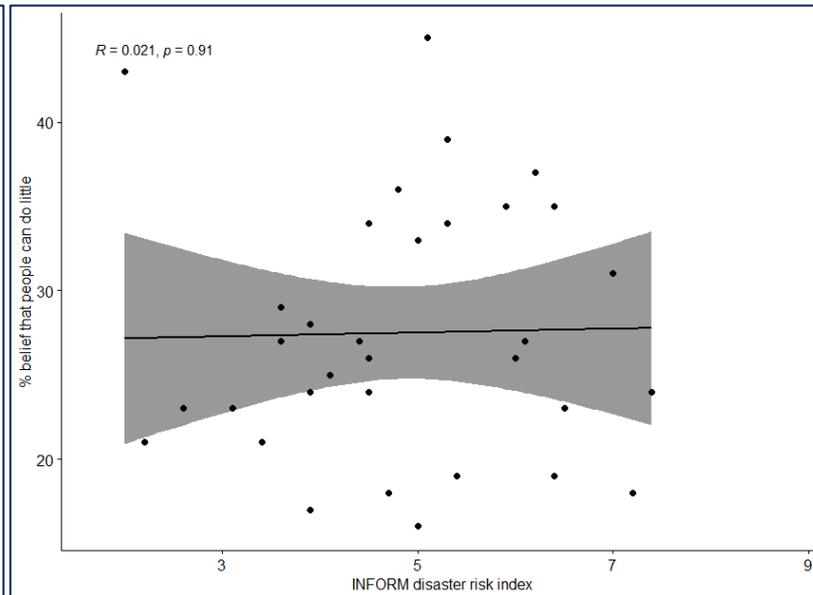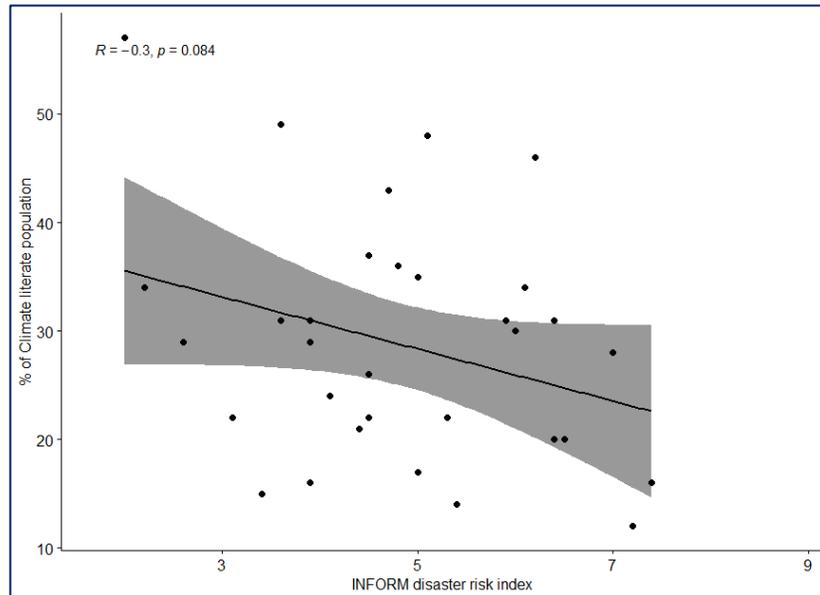
Data source: Afrobarometer Policy Paper No. 60 | August 2019

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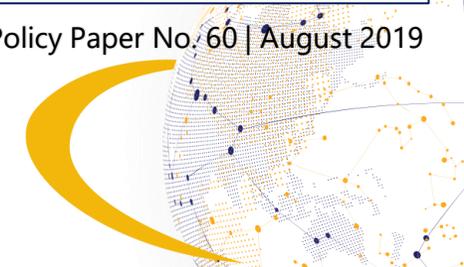
Concepts were from the INFORM methodology.
Policies used are available online.

Examples of Keywords/concepts searched

Conflict
- **Conflict/war**

Uprooted people
- **Refugees**
- **Internally/Externally Displaced persons**
- **Vulnerable Groups**
- **Disability**
- **Disease/illness**
- **Other limitations (e.g., pregnancy, lactating mothers, children, and elderly/old/aged people)**
- **Minorities/indigenous peoples**
- **Rural area population/dwellers**

Disaster Risk Reduction (DRR) policies
N=6

Nationally Determined Contributions (NDC)
N=9

National Adaptation Programme of Action (NAPA)
N=10
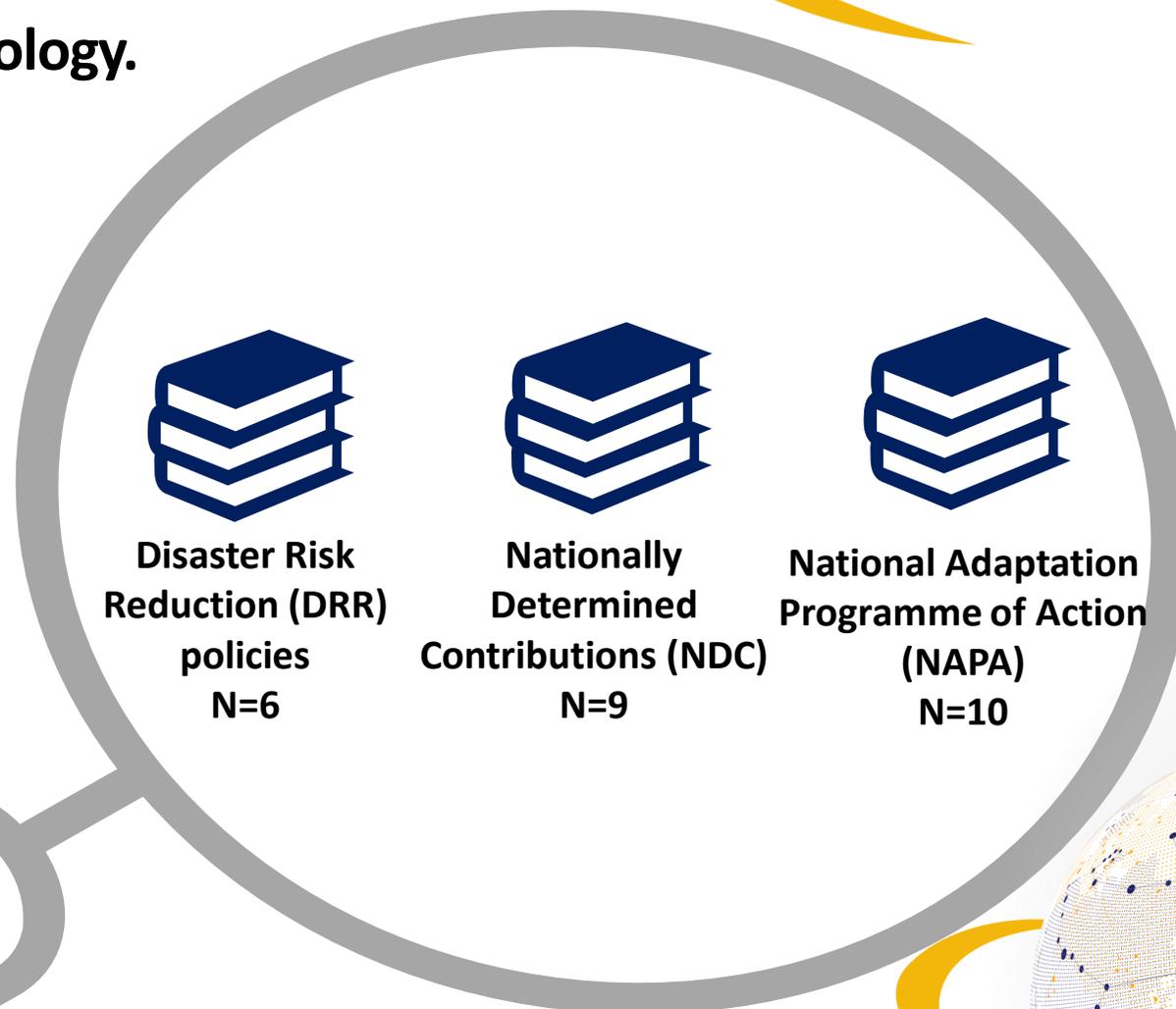
Vulnerability concepts appear more than coping capacity and human hazard concepts in selected policy documents.

Content Analysis Concepts: Wordcloud

INFORM DR factors vs CA Concepts counts
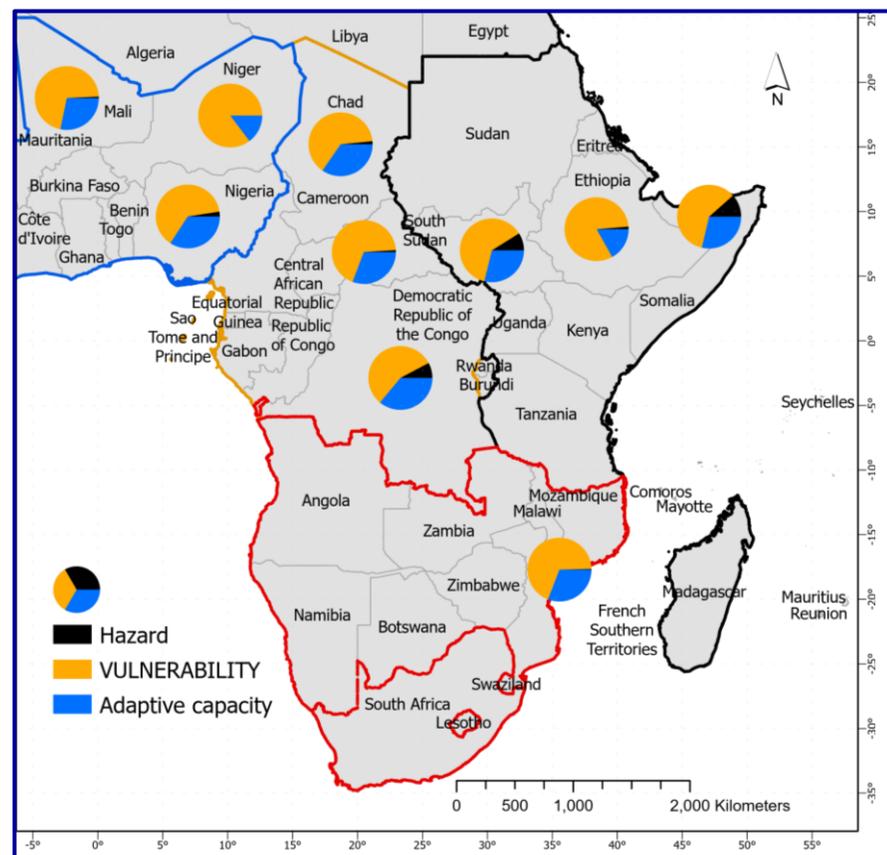
Regions: West Central East Southern

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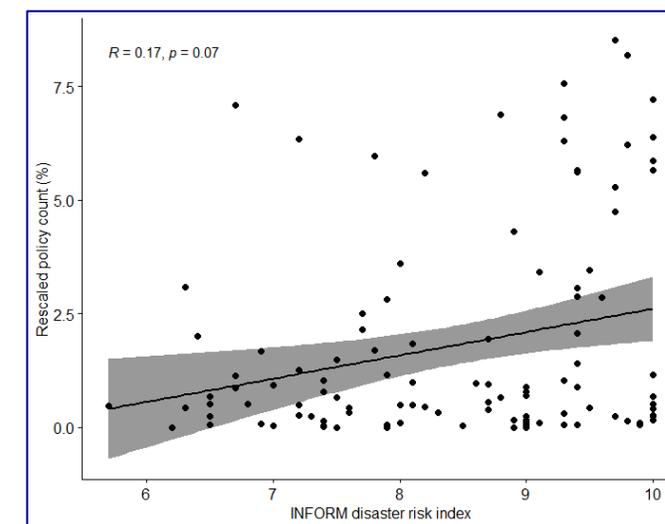
Africa's policies do not sufficiently capture coping capacity, human hazards & related vulnerability concepts driving disaster risk.

- Most of the disaster risk factors are not sufficiently included in the selected policy documents

- Human hazards are mostly ignored in the selected policy documents