Climate change, water and conflict in the Niger River Basin

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Presentation outline

• Background to the research
• Climate variability and climate change in the Niger basin region
• Research project design
• Description of case studies in Mali and Nigeria
• Summary of findings
• Conclusions
Background to the research (1)

- Concerns that climate change may exacerbate conflict in Africa
- Long history of research on pastoralist-farmer conflict – conflict has been linked to either resource scarcity or abundance
- Research shows that violent conflict over transboundary waters is rare, but tensions between countries influence possibilities for cooperation
Background to the research (2)

• Few studies have looked at the influence of climate change on water conflict at local and national scales.

• Niger river basin is a good case to examine because of the variability in climate experienced in the Sahel during the last 50 years.
Niger River Basin

Image: academic.evergreen.edu
Niger River Flows

Annual Rainfall (black line) and River flow (grey line) at Koulikoro (Mali), Conway et al. 2008
Sahel rainfall

JJASO–mean Sahel precipitation anomalies 1900–2010

Averages over 20–10N, 20W–10E; 1900–2010 climatology
NOAA NCDC Global Historical Climatology Network data
Future climate change projections for the basin

- Increase in temperature of 1.8 to 4.7°C by 2080s
- Change in rainfall during 21st Century is very uncertain: models show increase or decrease.
- Recent observations: wetter in central and eastern Sahel, drier in western Sahel.
- Some regional climate models show intensification of the monsoon and ‘greening’ of the Sahel.
- Extreme climate variability likely to remain important
- Changes in seasonal rainfall patterns likely – e.g. later start and shortening of wet season
Questions addressed by the research

• How do climatic and environmental stresses influence water resources and human security in the Niger River Basin?
• Does climate stress on water resources increase the risk of conflict?
• What types of adaptations, conflict resolution and governance mechanisms provide resilience to climate stresses and reduce the risk of conflict?
What do we mean by human security and conflict?

• Human security: protection from chronic threats and sudden, harmful disruptions to daily life.

• Conflict is not just about violence

• Conflict can be latent, manifest, or violent

• Forms of conflict include:
  – Verbal disagreements, formal complaints, disputes, peaceful protest, demonstrations, riots, or violence.

• Conflicts of interest can exist between different stakeholders
Research project design

- Three countries of the river basin: Mali, Niger, Nigeria
- Literature review
- Desk research (Niger) and field research (Mali/Nigeria)
- 3 case studies (2 in Mali, 1 in Nigeria)
- 73 Interviews / focus group discussions
  - National level
  - Local government
  - Villages
  - Gender sensitivity: separate interviews with men and women
Case study 1: Sélingué Dam, Mali
Sélingué case study

- Communities suffered significant losses from flooding in 2001 and 2010, despite having coping strategies.
- Men and women have different roles in coping with the impacts of flooding and drought.
- Stakeholder committee was set up to advise on dam management: - repeat of 2001 flooding incident has been avoided
- Negotiated and marked cattle corridors - appear to reduce conflict between pastoralists and farmers
Case study 2: Ségou, Mali
Ségou case study

• Farmers and pastoralists note changes in rainfall seasons and negative impacts on their livelihoods
• Sedimentation of the river is blamed for fish catch reductions, prompting changing livelihoods
• Competition for access to grazing land and water between farmers and pastoralists due to agricultural expansion
• Conflict resolutions strategies are no longer working well
• New irrigated sugarcane project will have a large impact on communities – and is a cause of uncertainty, tensions and concern
Case study 3: Lokoja, Nigeria
Lokoja case study

• Changes in rainfall, extreme rainfall events and flooding had negative impact on livelihoods
• Communities have conflict resolution mechanisms and adaptation strategies but these differ between communities and some are limited by lack of access to resources
• Poor information flow between government and communities can limit responses to stresses
• Communities expectations of government assistance are not being met
Findings on environment-climate stresses

• Extreme events and changes in the seasons cause stress to livelihoods
• There is a gender dimension to impacts on communities due to livelihood roles and social roles.
• Changes in the river and the basin have complex causes and links between degradation and climate are questioned.
• Future climate conditions are highly uncertain
Findings on climate conflict linkages

- Links between climate and conflict are complex and contested
- Climate stresses in combination with other social and political dynamics can lead to latent or manifest conflict
- Frustration and distrust of government due to unmet expectations of emergency response.
- Large scale water resource developments can cause conflicts of interest and distrust between the most vulnerable and the State and exacerbate existing conflicts.
Findings on responses

• Community conflict resolution and coping mechanisms exist but are often insufficient to avoid losses.
• Social networks, changes to livelihoods and conflict resolution mechanisms provide some resilience.
• Gender dimensions to responses.
• Early warning and emergency responses are limited.
• Information on developments is often incomplete.
• Participatory dam management committees have a role in adaptation to potential increase in flood risk in the future with climate change.
Findings on Governance

• Local formal and informal institutions at community level are more trusted than formal state institutions
• Limited effectiveness of early warning and disaster response activities
• Communities vary in their confidence and ability to engage with government
• Poor engagement of state institutions with communities hinders information exchange and program effectiveness
Conclusions

• Extreme events, competition over access to land and water and contested water management may be exacerbated by climate change and have potential for conflict.

• Future climate is highly uncertain therefore development and adaptation policies must be flexible to cope with extreme variability: both wetter and drier conditions.

• To avoid conflict, adaptation responses must adopt fair processes and outcomes that do not disadvantage the most vulnerable.