The role of scientists in Acid Mine Drainage policy response in Gauteng, South Africa

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Presentation Outline

- Acid Mine Drainage in Gauteng
- The Advocacy Coalition Framework (ACF)
- ACF Application: AMD as a policy subsystem
- ACF Application: AMD coalitions
- ACF Critique and considering framings
- Conclusions

Focus

- Understanding the AMD policy subsystem and the role of scientists within it
What is AMD?

Image from the Krugersdorp Nature Reserve on the West Rand of Johannesburg

• It is triggered by a chemical process that results in water becoming acidic; rich in sulphates and metals.

• It is particularly problematic in closed down or abandoned mines where pumping has stopped.

• It is a serious environmental hazard and has adverse socio-economic impacts.
Acid Mine Drainage (AMD) in Gauteng


- Central basin and eastern basin due to spill soon.

- In 2010 Inter-Ministerial Committee appointed a Team of Experts to develop an integrated short-, medium- and long-term solution to the AMD policy issue. This government response came after considerable publicity in the media and threats of legal action by NGOs.

- Complexity: historical link between government and mines, lack of inter-departmental coordination, scientific uncertainty, many actors involved.
The Advocacy Coalition Framework (ACF)

Unit of Analysis is the policy subsystem:
• Made up of actors from a variety of public and private organisations who are actively concerned with and trying to influence a specific problem and related policy.

Advocacy coalitions form which advance conflicting policy arguments:
• Coalitions form because of shared policy core and secondary beliefs (not because of institutional affiliation).

Importance of scientific and technical information:
• Can be used to legitimise arguments against opponents.
ACF Application: The AMD Policy Subsystem

• Actors from public and private organisations actively concerned with and trying to influence the AMD issue.

• **Actors include**: government, scientists, commercial interests, non-governmental organisations, the media, the public.

• Actors seem to have clustered around **three main coalitions**.
ACF Application: AMD Coalitions

- Tied to perceptions of **severity & urgency**.
- In **reaction to 2010 events**.

<table>
<thead>
<tr>
<th>Coalition members</th>
<th>Basic value priorities</th>
<th>Group whose welfare is of greatest concern</th>
<th>Seriousness of the problem</th>
<th>Cause of the problem</th>
<th>Distribution of authority</th>
<th>Policy preferences</th>
</tr>
</thead>
</table>

![Diagram showing decision options: Do Nothing, Act Now, Hold On]

- Do Nothing
- Act Now
- Hold On

- Scientists
- Scientists, Government, Private Consultancies
- Scientists, Civil Society, Media

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ACF: Critique and considering framings

- Dynamics within coalitions are not sufficiently explained (Hysing and Olsson, 2008).
  - Not necessarily as homogenous and coordinated as ACF suggests.

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<tr>
<th>Do Nothing</th>
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| - Relatively **homogenous** in terms of composition and beliefs. | - Coalition was “**forced**” to form, but after much deliberation consensus developed around short-term response.  
  - Much **debate** still about medium- and long-term solution. | - Very diverse scientific views around key points.  
  - Treatment options:  
    - Technology choice  
    - Centralised or decentralised?  
  - Uses of water  
    - Drinking water  
    - Crop irrigation |
ACF: Critique and considering framings

- Dynamics between coalitions and policy subsystem developments are not sufficiently explained (Hysing and Olsson, 2008).
  - Cannot explain why previously opposing Act Now and Hold On coalitions are moving closer together.

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<tbody>
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<td>• No consultation for short-term solution but increasing involvement of members of Hold On Coalition to define medium- and long-term solution.</td>
<td>• Actively engaging medium- and long-term solution process, despite frustrations with short-term solution. • Who within this coalition will be heard?</td>
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ACF: Critique and considering framings

- The role of scientists in AMD policy subsystem and policy response is not sufficiently explained.

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| • Scientists as “ivory tower” critics of government process. Provide advice when asked. | • Scientists as advisors and supporters to government and the Hold On Coalition.  
• Scientists can be inconsistent in what they say and do depending on funding or audience. | • Scientists from the Hold On Coalition have very diverse views around the response to AMD.  
• They contribute to the uncertainty regarding a preferred policy response in this coalition.  
• They expose the Act Now Coalition to a variety of treatment options, not only the most obvious one. |
Conclusions

**Focus:** Understanding the AMD policy subsystem and the role of scientists within it.

- ACF is **relevant** to the study of AMD:
  - Policy subsystem is a valuable unit of analysis.
  - Helps us understand AMD coalitions.
  - Acknowledges that science plays an important part.

- ACF has **limitations** in explaining:
  - Intra- and inter-coalitions dynamics.
  - Role of scientists in a policy subsystem and policy response.

- **Way forward**
  - Using ACF in conjunction with other perspectives for example considering how an issue is framed by different subsystem actors
  - What can this tell us about the issue that ACF cannot?
  - Practical use and value of this analysis.
Thank you