


Regulatory Framework for Hydraulic Fracturing and other types of unconventional gas mining

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Outline of presentation:

- Water Legislation- some relevant sections of the National Water Act (NWA)
- Some concerns from a water perspective
- Task teams
- Principles of water regulation for unconventional gas mining
- Summary



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NWA (Act 36 of 1998)

Sec 3 (1) As the public trustee of the nation's water resources the National Government, acting through the Minister, must ensure that water is protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner, for the benefit of all persons and in accordance with its constitutional mandate



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NWA (Act 36 of 1998)

Sec 19 & 20:

Prevention and remedying effects of pollution-
“....must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring..” (sec 19 (1) (b))

The regulatory target would be for unconventional gas mining to go for **prevention and nothing less**



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NWA (Act 36 of 1998)

Sec 37 and 38:

*This Part allows the Minister to regulate activities having a detrimental impact on water resources by declaring them to be **controlled activities**.*

*Four such activities - irrigation using waste or water containing waste from certain sources, modification of atmospheric precipitation, altering the flow regime of a water resource as a result of power generation, and aquifer recharge using waste or water containing waste - are identified in the Act as **controlled activities**.*



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NWA (Act 36 of 1998)

Sec 37 and 38:

*Provision is made for the **Minister to declare other controlled activities as the need arises,** but in these cases public consultation is required. Following the identification or declaration of a controlled activity an authorisation for that particular category of activity is required under this Act.*



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Main concerns to be addressed through water regulation

- Most catchment areas identified for unconventional gas mining already stressed because:
 - the demand currently outstrips available water (see map)
 - pollution already a problem
- Many unknowns and uncertainties in very deep Karoo geology /hydrogeology may complicate matters
- Migration of gas or fracture fluids
- Negative impact on existing and future water users



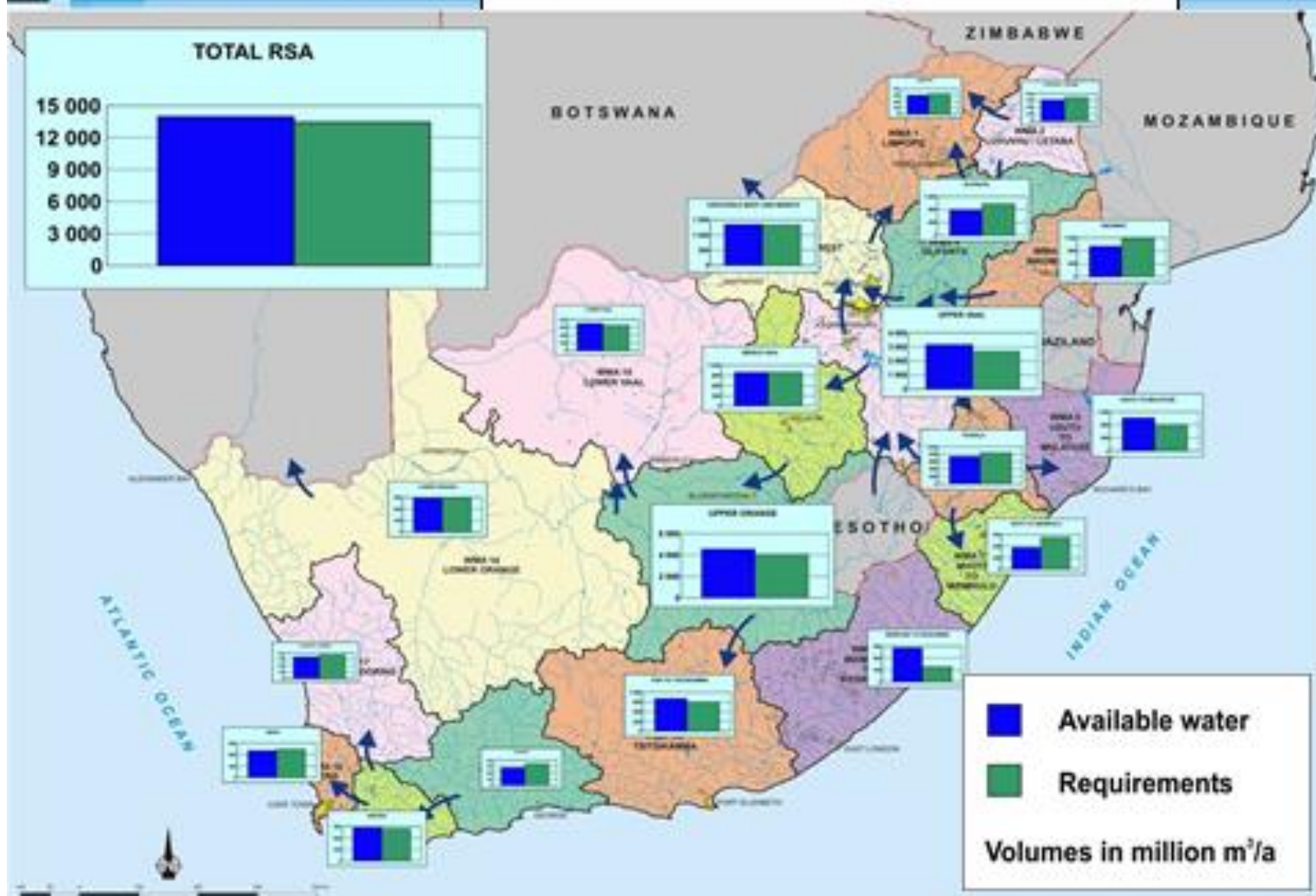
Main concerns to be addressed through water regulation

- Large quantities of water to be used for process
- Loss of existing aquifers and boreholes
- Contamination of existing sources
- Degradation of drinking water quality
- Surface spills and pollution of water sources (Fate of produced water from process)
- Possible Scale of operations- enormous and over vast areas
- Effective Monitoring and Enforcement

Rivers often dry



Water reconciliation (year 2000)



A decorative graphic at the top of the slide showing a dynamic splash of blue water with white foam and bubbles, creating a sense of movement and freshness.

Task Teams

- DWA established its own internal team with WRC combining different units in DWA
- DWA participates in a Interdepartmental Task Team chaired by DMR
- Each department to ensure that its own legislation is enforced.(DWA to ensure that NWA and WSA are enforced)
- Co-ordination between the different sets of regulation and departments as regulators
- Mining companies to apply for the necessary water use authorisations (licenses) to DWA
- Very strict conditions will be put in such licenses if and when issued



Main principles of regulation

- Current water users especially communities and farmers dependent on underground water as their only water source must be protected at all cost.
- Special measures to be implemented to ensure zero risk of pollution of water resources .
- DWA must be part of total process from exploration to exploitation and remediation
- DWA to ensure that detail, reliable baseline information is established before any mining starts
- DWA particularly interested in the possibility of deep seated aquifers- these can be a valuable water source and should also be protected.



Regulatory- Way Forward

- Use DWA “all town reconciliation studies” for water resource planning and alignment with regulation
- “Best Practices” vs “Legally prescribed under”
- Strengthen NWA regulations plus specific regulations/guidelines and enforcement capacity
- Urgently collect new geohydrological data.
- Identify and seal off geo-hazards (e.g. dykes)
- Plugging and abandonment, surface remediation, monitoring and reporting.
- Waste disposal wells or any other disposal sites (expand NWA regulations)



Regulatory- Way Forward

- Unconventional gas mining both challenge and opportunity
- South Africa can develop the best regulation of unconventional gas mining if we are pro-active and learn from the experience of others
- Our situation is however also unique and we must be innovative.
- Work with other regulatory bodies
- Strict enforcement of regulation and license conditions
- Strong partnership with affected communities and NGOs
- Keep the public and media informed



Thank you

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