

Governance Structure for Groundwater Management in Lagos State: The Policy, Legal, Regulatory and Institutional Perspective

Paper Presented By

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Purpose of Presentation

- Provide insights into the governance gaps in sustainable management of groundwater;
- Identify the impact on, and what role policy, legal, regulatory and institutional structures can make in relation to these gaps;
- Elaborate on the strategic themes necessary for Lagos State to establish more sustainable paths to groundwater management through practical action; and
- Propose an agenda that can catalyse the desired future for sustainable management of groundwater.

Concept of Governance Structures

- The use of institutions and structures of authority to allocate resources and coordinate or control activity;
- Organizational solutions for giving effectiveness to rules (guarantee rights and duties, their implementation and coordination);



The Three Key Governance Questions

- **Oversight** – Should we be doing this? Right people? Right tools?
- **Insight** – Are these the best activities for generating what we want?

Are there better practices that we can learn from?

- **Foresight** – what activities will be required in the future.

Creating A Successful Governance Model

- No single model is a fit for all purposes;
- Determining a governance approach requires *creative use of practical knowledge* and *understanding of the culture and peculiar circumstances* of the system involved:
- Successful Governance structure must be able to deliver:
 - A clear vision;
 - Secure resources;
 - Define clear roles and responsibilities;
 - Establish benchmarks for performance and monitoring;
 - Be accountable to key stakeholders;
 - Be transparent, and give freedom of access to information; and
 - Achieve integrated management of surface and groundwater quality and quantity.

Sustainable Management as Goal of Groundwater Governance

- Balance current and future needs of clean water between humans and non-humans in the context of limits to development;
- Simultaneously achieve four things:
 - providing all humans with access to safe, clean supplies of water to meet their basic needs;
 - sustaining healthy freshwater ecosystems that provide socially valued ecosystem services and products;
 - enabling the remaining water to thereafter serve the broadest possible array of socially valued purposes; and
 - serving all of the above purposes in a way that does not compromise the abilities of future generations to do the same.

Groundwater Governance Issues

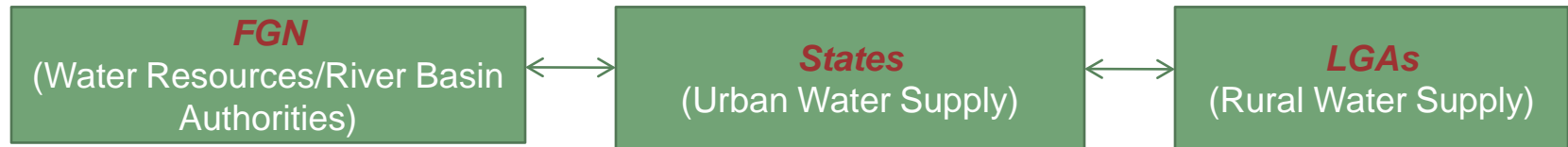
- Lack of data and scientific understanding is a key constraint to predicting aquifer functioning;
- Rights systems (use, access, withdrawal, management) are difficult to design and implement for varied technical and economical reasons;
- Aquifer management is politically complex in the way it requires changes to established use patterns;
- Climate change and globalization have reduced peoples' commitment to be involved in implementation of long-term management strategies.

Gaps In Groundwater Governance Structure

- The ability to cope with the acceleration of degradation of groundwater systems by over abstraction, and effective resource depletion through quality changes;
- The failure to resolve competition for groundwater and aquifer services between sectoral uses and environmental externalities;
- A lack of professional and public awareness about the sustainable use of groundwater resources, resulting in a lack of coherent planning frameworks (policy responses/institutional development) to guide scales of groundwater development.

Legal Setting For Groundwater in Nigeria

- With the exception of boundary/interstate waters the Constitution of the Federal Republic of Nigeria 1999 accords jurisdiction over water supply services to the State;



- Water Resources Act of 1993 did not emphasise the significance of groundwater (focussed more on surface water);
- Nigeria is not on track to reach the MDG for water and sanitation (*opinion of commentators*).

Goal of Proposed National Water Resources Bill

- Ensure that water resources of Nigeria are put to beneficial use to the optimum level of which they are capable;
- Ensure that funds from both public and private sector participation in the development of the water sector would be prudently managed to ends that serve the best interest and welfare of the people;
- Ensure that regulatory control of the water sector would be vested in an independent body;
- Ensure that government agencies and units charged with implementation and enforcement would have the right orientation, correct group and social commitment.

The National Policy

“The Nation’s water services are under serious threat from inadequate catchment management and widespread pollution, including the indiscriminate disposal of hazardous substances. ***There is limited groundwater availability in the areas of the country underlain by crystalline rocks. In the more productive sedimentary areas, groundwater exploitation is heavy and uncontrolled.*** In addition to the above challenges, poor watershed management, deteriorating water quality, drought and desertification are inexorably increasing water scarcity”.

Lagos: Current Status Quo

- Characteristics: water supply service quality and cost recovery are low; water tariffs are low and unpaid; private investment is insignificant; groundwater exploitation is uncontrolled.

- The Lagos State Water Sector Law, 2004 is the primary statute governing the use of water
 - Part I - Lagos Water Corporation
 - Part II - Regulatory Commission
 - Part III - Waste Water and Sewerage Services
 - Part IV - Water Quality Standards and Environmental Issues
 - Part V - State Water Sector Court

- Lagos State is on the verge of presenting its Water and Sanitation Policy.

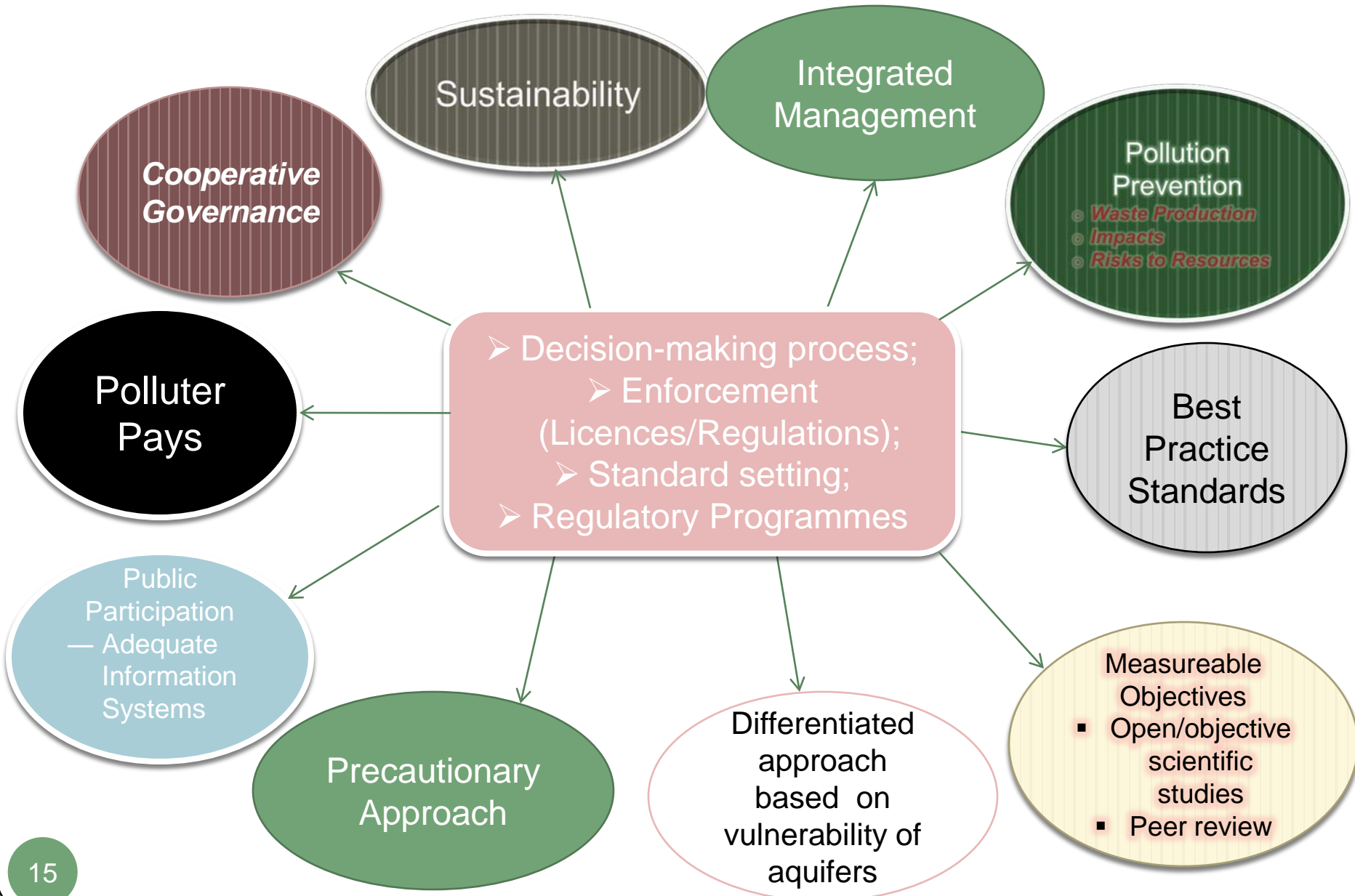
Critical Policy Goals

- To implement ***source-directed control measures*** to prevent/minimise, at source, impact of development on groundwater quality (regulatory controls and incentives);
- To implement ***resource-directed measures*** in order to manage impacts that do inevitably occur (goal is to protect, reserve and ensure suitability for beneficial purposes);
- To ***remediate*** groundwater quality where practicable to protect the reserve and ensure fitness for purpose.

Implementing the Policy

- Create awareness of the importance and vulnerability to pollution of the State's groundwater resources;
- Establish an understanding of the relationship between polluting activities (origin/sources) and quality of groundwater (the pathways);
- Regulation and prohibition of land-based activities which threaten or may affect the quantity and quality of water.

Fundamental Value Guiding Principles



Legal Perspective

- Legal framework must be capable of being revised from time to time:
 - through power to make regulations;
 - premised on research initiatives identifying needs for revision;
 - premised on the State's priorities.
- Legal framework must be capable of being implemented.

Regulatory Perspective

- Purpose of regulatory intervention is to ensure that policy goals are achieved;
- 3 broad regulatory instruments:
 - **Direct intervention** – command and control is either **reactive or proactive** in nature, and will focus on source of pollution;
 - **Incentive programmes** – flexibility to meet prescribed objectives;
 - **Supportive programmes** – regulator provides assistance to the regulated to achieve regulatory goals.
- Instruments are not mutually exclusive

Regulatory Perspective....

Direct Intervention	Incentive Programmes	Supportive Programmes
<ul style="list-style-type: none"> • Protection of water resources; 	<ul style="list-style-type: none"> • Self-imposed discipline by the regulated (mobilise to develop sectoral norms/standards); 	<ul style="list-style-type: none"> • Issuance of best practice guidelines to educate/build capacity;
<ul style="list-style-type: none"> • Licences for use of water/ discharge of waste water; 	<ul style="list-style-type: none"> • Use of charges, taxes and levies. 	<ul style="list-style-type: none"> • Educational programmes to raise awareness and develop skills;
<ul style="list-style-type: none"> • Waste handling; 		<ul style="list-style-type: none"> • Research and development to build capacity and advance knowledge;
<ul style="list-style-type: none"> • Underground storage tanks; 		<ul style="list-style-type: none"> • Extension services to assist communities in implementation/ operation of groundwater programmes.
<ul style="list-style-type: none"> • Irrigation of effluents; 		
<ul style="list-style-type: none"> • Land based disposal of sewage; 		
<ul style="list-style-type: none"> • Pollution remediation; 		
<ul style="list-style-type: none"> • Emergency action; 		
<ul style="list-style-type: none"> • Controlled activities. 		

Regulatory Perspective...

- Critical to group regulatory functions (flexibility and efficiency)
 - Identify ***main functions*** around the policy goals;
 - Identify ***subordinate*** functions;
 - Identify ***integration*** functions.

Template of Framework for Integration

Groundwater Quality Management Strategy

Source directed Strategies

- Authorizations and licences;
- Requirements to minimize impact of water use;
- Standards to regulate the quality of waste discharges to water resources;
- Requirements for on-site management practices (e.g. minimize waste at source and control diffuse pollution);
- Requirements for clean-up and remediation of water resources already polluted.

Resource directed Strategies

- Classification system for water resources, including groundwater;
- Determining a management class for each resource;
- Determining the "Reserve" for all or part of any significant water resources such as rivers, streams, wetlands, as well as groundwater;
- Setting resource quality objectives which represent the desired level of protection of a water resource.

Remediation Strategies

- Prioritization and evaluation of priorities for remedial action;
- Identification and remediation of abandoned sites;
- Emergency action procedures.

Integrated Strategies

Monitoring – Research – Water Quality Guidelines – Catchment Management – Audit

Critical Imperatives of Regulation

- Good understanding of groundwater quality status, and ability to anticipate threats;
- Good understanding of the relationship between the causes of groundwater damage and the effect on the resource;
- Remedial measures must be taken in the context of the principle that “*the polluter should pay*” except where this is impossible;
- Internal co-ordination with external liaison must seek to achieve required level of integration between surface and groundwater requirements;

Critical Imperative of Regulation...

- Streamline authorizations with other relevant agencies to achieve speedy processing (adoption of a one-window approach);
- Co-operation with other agencies of the state, industry and civil society in developing best management practices;
- Proactively participate in land-use planning to ensure that potentially polluting processes and facilities are sited where aquifers are least vulnerable or where no exploitable ground water exists;
- Routine auditing of performance of the regulatory system.

Critical Areas of Regulatory Focus

- Groundwater abstraction, de-watering and recharge;
- Disturbance and damage to aquifers by industrial activities;
- Diffuse sources of pollution associated with urban and rural development;
- Underground storage tanks;
- Waste disposal and storage;
- Spills and illegal dumping;
- Pit latrines, septic-tanks and soakaways;
- Farming practices and the use of fertilizers, herbicides and pesticides.

Hierarchy of Regulatory Intervention

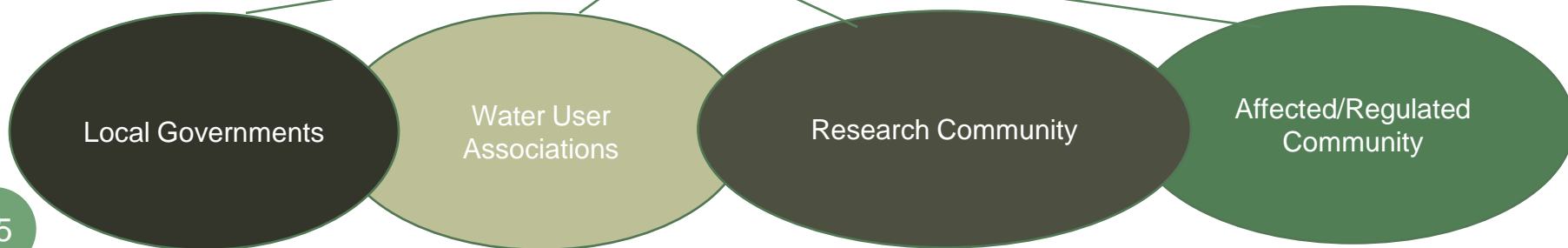
- Encouragement of self-regulation;
- Monitoring of relevant extant controls (laws and regulations) implemented by other agencies of the State;
- Regulatory controls as imposed by the State Water Sector Law;
- Development of Best Practice Guidelines to meet gaps.

Institutional Perspective

➤ The Role Players

- Lagos State Water Corporation;
- Lagos State Water Regulatory Commission;
- Lagos State Drug Quality Assurance Laboratory;
- Lagos State Environmental Protection Agency;
- State Water Sector Court;
- Other relevant agencies of government.

Integrated Water Management Control



Institutional Strategies

- Strategic reorientation of role players to a catchment management based structure;
- Cooperative communication/governance;
- Centralised planning and decentralised implementation;
- Adequate funding to develop requisite management instruments to address future needs proactively;
- Capacity building and development of human resources (maintain skills and discipline);
- Implementation with conviction at all levels.

Assessment of the Current Status Quo

- Current structure has its emphasis on surface water with the result that capacity for groundwater management is limited;
- A number of things are already in place upon which the State can leverage while restructuring:
 - **Mandate** to control and manage all waterworks and groundwater in the State (S.6(e));
 - **Monitoring** of underground waters to determine if pollution exists (S.7(l));
 - **Control** of sinking/operation of boreholes and abstraction from underground water (S.7 (m));
 - **Preservation** and the conservation of the sources of water in catchments areas (S.26(o));
 - **Vision** for Regulations to guide construction of well and borehole (S.43(2));

Assessment of the Current...

- **Facilitate** efficiency in the water sector and incentives for investment (S.51(2)(a));
- **Promote** consistency in regulation between States and on a national basis (S.51(2)(g));
- **Conduct** public education programmes to promote objectives of Water Sector Law (S.52(q));
- **Consultation** with relevant agencies (S.67);
- **Use of** licence to authorize prescribed activities (Ss.82 – 89);
- **Conflict resolution** mechanisms (Ss. 132 – 142).

A number of programmes will need to be developed to know the focus of reforms and fill gaps.

Some Areas of Focus of Reforms (Research & Development Needs)

- Aquifer classification and aquifer management system development;
- Impact consent procedural system development;
- Facility level groundwater monitoring;
- Groundwater information system development/
Data acquisition;
- Resource level groundwater quality monitoring;

Some Areas of Focus of Reforms...

- Reserve determination;
- Identification of groundwater restoration priorities;
- Community water source protection;
- Public participation.

Note: To develop wholly or in phases the above, and oversee their implementation into the operational regulatory system.

Moving Forward: Plan of Action

➤ A diagnostic...

- Policies;
- Rights systems;
- Institutions and capacities;
- Regulatory frameworks;
- Public involvement;
- Self-Governance.

Defined goals and objectives/finite life span.

A Template for Diagnosis

- Legal framework and institutions must be able to respond to and foster demand;
- Alignment of formal norms with underlying social norms and beliefs as much as possible;
- Laws and Institutions must provide solutions for actual conflicts and take the interests behind such conflict into account;
- System must encourage voluntary compliance.

THANK YOU