



# 7.07 Groundwater Research & Management TRANSDISCIPLINARY & PARTICIPATORY APPROACHES

## INTRODUCTION

**Dr Stephen Foster**

**IAH—Past President 2004-08**

**GWP—Senior Adviser 2011-15**

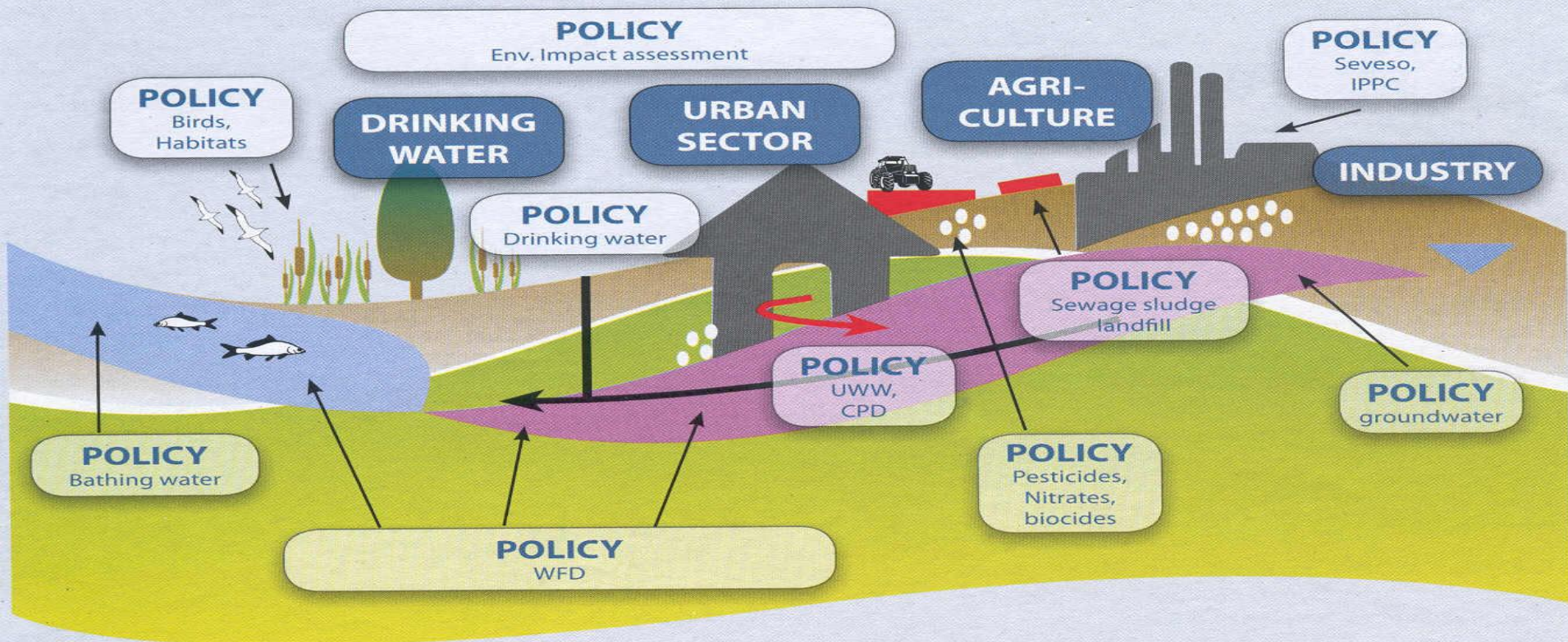
**University College London—Visiting Professor**

# Groundwater Protection in Europe

2000-08



THE NEW GROUNDWATER DIRECTIVE – CONSOLIDATING THE EU REGULATORY FRAMEWORK



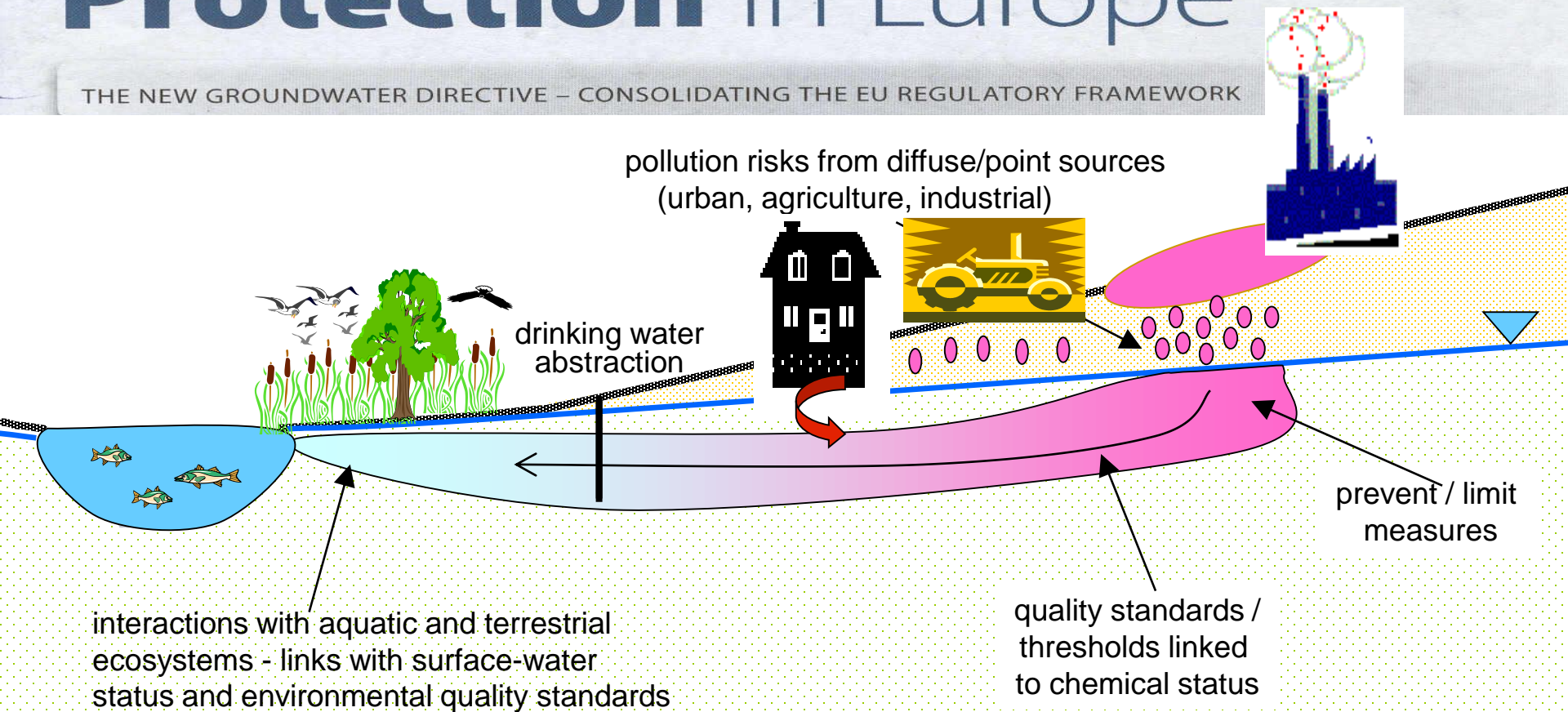


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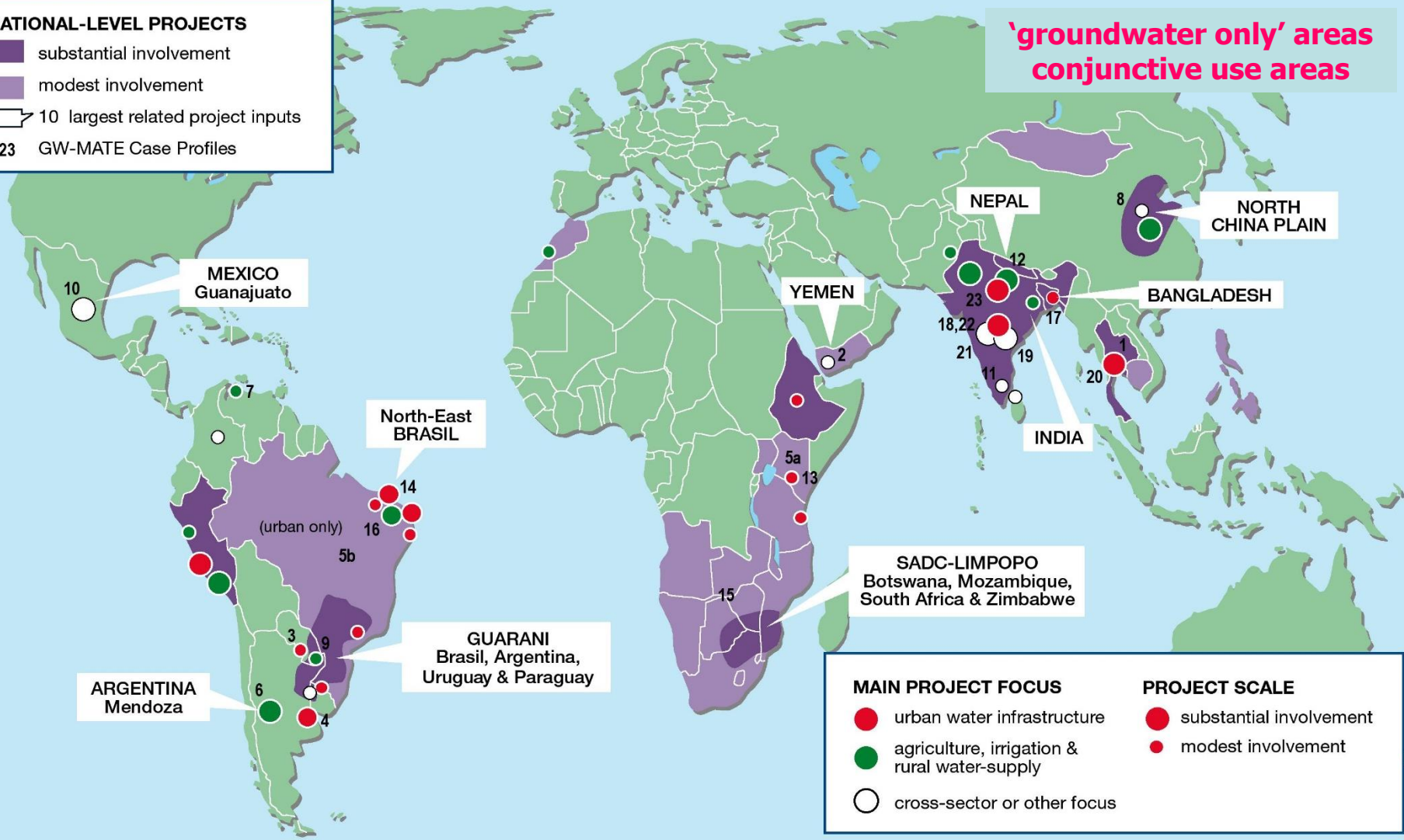
**focused mainly (but not exclusively) on groundwater quality and pollution control**



**NATIONAL-LEVEL PROJECTS**

- substantial involvement
- modest involvement
- 10 largest related project inputs
- 1-23 GW-MATE Case Profiles

'groundwater only' areas  
conjunctive use areas



MAIN PROJECT FOCUS		PROJECT SCALE	
<span style="color: red;">●</span>	urban water infrastructure	<span style="color: red;">●</span>	substantial involvement
<span style="color: green;">●</span>	agriculture, irrigation & rural water-supply	<span style="color: red;">●</span>	modest involvement
<span style="color: white;">○</span>	cross-sector or other focus		

resource depletion predominated over quality degradation

# Sustainable Groundwater Management Concepts & Tools

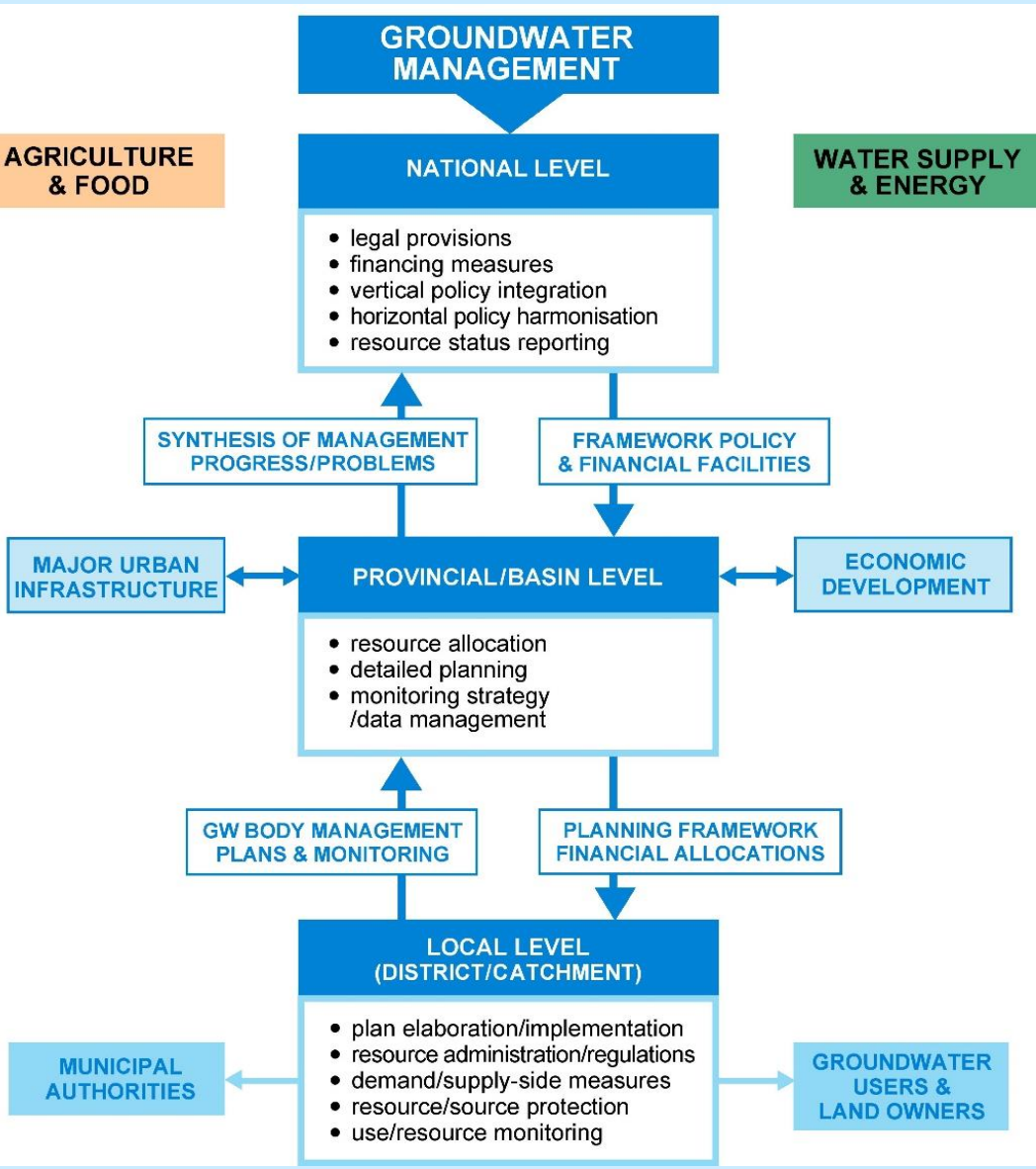
Briefing Note Series Note 6\*

## Stakeholder Participation in Groundwater Management enabling and nurturing engagement

2010

- **based on positive and negative experiences from Argentina, Brasil, China, India, Mexico, Morocco, Yemen**
- **rarely spontaneous – ‘bottom-up’ action almost always needs facilitation by ‘top-down’ provisions (easier for small-scale groundwater systems with homogeneous stakeholder profile)**
- **usually needs (direct/indirect) awareness raising, financial support, legal framework, monitoring involvement, information systems, etc**
- **essential to build consensus on groundwater sustainability, ownership of management objectives and alignment with socio-economic realities**





- **'vertical coordination'** - local decentralised' action by groundwater users/potential polluters within a coherent framework
- **'horizontal integration'** - groundwater considerations into policy of related sectors



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### TRANSDISCIPLINARY FACETS

- **transdisciplinary approaches (geo-physico-?bio to social-economic-legal) - but in professional terms do we know enough about each others metrics to work effectively together ?**
- **for groundwater system and user/polluter response – do we understand enough about each others 'error bands' and about social opinion-forming and political decision-making ? (need to be integrated/ but also principled and pragmatic/adaptive)**



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#### PARTICIPATORY FACETS

- **participatory ('bottom-up') approaches essential to achieve groundwater sustainability (even in the broadest sense)**
  - **but how can this be enabled and nurtured**
  - **what about ('top-down') economic incentives and legal empowerment ?**
- **challenge of governing 'common pool resources' has a long history – Garet Harding (1968) to Elinor Ostrom (1990) – reflected in the UN Dublin Principles for IWRM (1992)**





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[www.worldbank.org/gwmate](http://www.worldbank.org/gwmate)  
[www.un-igrac.org/gwmate](http://www.un-igrac.org/gwmate)  
[www.gwp.org/toolkit/groundwater](http://www.gwp.org/toolkit/groundwater)  
[www.iah.org/learning-resources/strategic-overviews](http://www.iah.org/learning-resources/strategic-overviews)  
[www.iucn.org/resources/publications/spring](http://www.iucn.org/resources/publications/spring)



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## CLASSIFICATION OF PRESENTED PAPERS

SUB-COMPONENT (Focus)	CONTEXT (Author )
<p><b>STAKEHOLDER PARTICIPATION</b></p> <ul style="list-style-type: none"> <li>• Institutional Frameworks</li> <li>• Stakeholder Profiling</li> <li>• Conflicts of Interest</li> </ul>	<p>Canada (Rene Lafabrve) EU (Peter Penning) S-S Africa (Richard Taylor)</p>
<p><b>TRANSECTOR POLICY &amp; PRACTICE (Control of Diffuse Agricultural Pollution)</b></p> <ul style="list-style-type: none"> <li>• Effective Dialogue &amp; Voluntary Codes</li> </ul>	<p>EU-Italy (Viviana Re) EU-England (Sean Burke)</p>
<p><b>INTERDISCIPLINARY WORKING</b></p> <ul style="list-style-type: none"> <li>• Roles, Tools &amp; Communication</li> </ul>	<p>S-S Africa (John Thompson) Nigeria (Ali Bakari)</p>