Groundwater research into policy within the context of Africa & the SDGs

Guy Howard
WASH Policy Team Leader
DFID
The role of groundwater in the SDGs

• Relevant to many SDGs but particularly:
  • 6: Clean water and sanitation (all targets)
  • 1: No poverty (particularly target 1.4)
  • 2: Zero hunger (particularly targets 2.3, 2.4, 2.6)
  • 11: Sustainable cities and communities (particularly targets 11.1, 11.5, 11.6, 11.9)
  • 13: Climate action (particularly targets 13.1, 13.2, 13.3, 13.5)
  • 15: Life on land (particularly targets 15.1 and 15.3)
Scale of SDG ambition implies significant research need

• Mix of applied and fundamental research
• For groundwater this is likely to mean:
  – Availability, accessibility and distribution of groundwater resources
  – Improving understanding of water quality – natural and man-made pollutants and also sub-surface processes that reduce pollution risks
  – Economics: in particular comparative value for money for groundwater development
  – Climate impacts in the medium and long-term, taking into account other drivers
  – Groundwater in the water-energy-food nexus
Availability, accessibility and quality

• Where and how much groundwater exists?
• How accessible is this and how much will it cost to abstract?
• What are sustainable rates of abstraction? Can we cope with short-term ‘over-abstraction’ if we balance over the long-term?
• What is the quality of the water and what will it cost to treat?
• What are the emerging threats to water quality and how do we manage these cost-effectively?
• Can we use sub-surface processes to treat wastewater and augment supply?
Economics

• How much will it cost to develop, manage and protect groundwater?
• What is the cost-benefit of developing groundwater and how does this compare to alternatives? (both short-term and long-term)
• What is the right mix of surface and groundwater sources in supply that offers the best value for money?
• Do new technologies either greatly increase value or reduce costs (or ideally both)?
Groundwater and climate

• Will climate change affect the availability and/or accessibility of groundwater and what will this mean for water security and supply?
• Will climate change have an impact on water quality and what can be done to limit this?
• Should groundwater resources be held in reserve or developed now?
• Where will hot-spots occur that will create additional stress on groundwater?
The dreaded nexus...

• How much groundwater is needed for domestic, food and energy supplies and do we have enough?
• What is the right balance and what trade-offs need to be considered in allocation of water?
• What actions are needed to manage demand? (noting that this may mean research into consumer demand for energy rather than water)
• Can groundwater be used for energy development and what would this cost?
Policy-research interface

• Good policy and operational decisions need sound evidence
• To achieve requires time, engagement and co-creation of research (whether short or long-term)
• For policy makers understanding where evidence gaps exist helps ensure that research that is commissioned is relevant
• For researchers understanding policy needs helps design better research
Making research policy relevant

• Some of this is straightforward – the ‘what should do I now questions’
• Research focused on key policy questions that deliver results in a short time-frame and gives actionable recommendations
• E.g.: mapping of groundwater resources in drought affected regions that show the degree to which new water sources can be brought online
• Clear, actionable research showing availability, accessibility and costs of development in a short-time frame
Longer-term policy issues

- Some policy questions require much longer-time frames and will have much less certain outcomes
- E.g.: what are the implications of climate change for groundwater availability and what strategies are needed to protect and manage these resources?
- Research will take longer to deliver final answers and will need to be structured to provide interim findings to provide direction.
- There will be significant uncertainty both in terms of being able to answer question and what that answer may be
Translating research into policy

• Possibly the most tricky bit of the interface - what appear to be eminently sensible suggestions to researchers often fail to gain traction
• This is usually because these fail to appreciate:
  – Costs of implementation
  – Failing to understand trade-offs – e.g. your great idea for multi-million pound investments to upgrade water supplies has to compete with other equally urgent needs in health or education
  – Political realities when long time frames required for action
  – Public perceptions
So who are the key policy makers?

• Research commissioners are often not involved in policy (this is true of DFID for instance) – so greater outreach needed
• Most important are the policy makers in the country(s) where research carried out
• Donor policy makers – useful to consult and trick is to ensure research policy aims complement donor policies
• Ultimately it is who will actually pay for implementing recommendations who need to be on board
And finally

• There are major research questions on groundwater for the SDG delivery – we need to ensure we are getting the questions right to answer policy concerns
• Good research comes about when there is not just lip-service to policy needs but genuine and comprehensive dialogue and co-creation
• Research that focuses on delivering practical solutions (even if not as strong scientifically) tends to delivery better outcomes that fantastic science that no-one can use!