Building Low Cost Local Well Drilling Capacity in Senegal

Jonathan Naugle
Ibrahim Mamadou

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Introduction

• Background
• Project Context
• Local Capacity Building
  – Why build local capacity?
  – Why use private sector?
  – Why low cost options?
  – How to maintain quality
  – How to build local capacity
• Risks and Benefits
EnterpriseWorks

EnterpriseWorks is an American NGO with over 35 years experience in the transfer of technologies through the private sector in irrigation, water supply, agro-processing and household energy.
USAID PEPAM Project Senegal

• Project $21 million July 2009 to June 2014
• Led by RTI and funded by USAID the PEPAM project’s goal is to help Senegal to reach the MDGs in water supply and sanitation.
• EnterpriseWorks led the component that built local capacity for well drilling, well and pump rehabilitation and provided skills training for businesses and water user associations.
USAID PEPAM Project Senegal

Manual Rotary Jetting

LS-300 Drilling Rig

Hydrogeology Training

Business Training
Why build local capacity?

- More Sustainable
- Creates Employment
- Improves Skills
- Shortens Supply Chain
Why the private sector?

• Non-profits and governments are not business oriented
• Private sector depends on activity for livelihood
Why low cost options?

• Substitute labor for capital
• 100 manual drilling rigs = 1 large rig
• Easier to move equipment to remote locations
• Less financial risk in conflict situations
• Lower operation and maintenance costs
• Locally available tools and supplies
• Manually drilled wells 75% savings
Comparison of Borehole Costs

- **Hand Drilled**
- **Small Rig**
- **Large Rig**

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<th>Cost of Well (FCFA)</th>
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Legend:
- Blue: Hand Drilled
- Red: Small Rig
- Purple: Large Rig
- Green: Small Rig with Geo-Physical Study
- Blue: Large Rig with Geo-Physical Study
What about quality?

• Consider what affects the quality of a well
• Is the way the hole is made a consideration?

We need professional drillers regardless of technique
The Goal
Numerous private drilling enterprises, quality control firms, social mobilization organizations, tool makers, and pump suppliers creating a vibrant competitive sector.
Many more people with access to safe water
How it was done in Senegal

Enterprise Selection

Needs Assessment

Training

Evaluation

Re-Training

Certification
What are the benefits?
• Quality wells for individuals, farmers, projects and businesses
• More people with access to improved water supplies
• Economic development
• More sustainable
Results in Senegal

• 13 Manual drilling businesses
• 3 Businesses using small LS-300 rigs
• 3500 wells have been drilled by hand in the past 20 years, most not funded by donors
• USAID/PEPAM 303 hand drilled wells and 74 small rig drilled wells serving 69,520 people
What are the risks?

• Ease of business start-up can result in:
  – Uncontrolled drilling
  – Poor quality wells
  – Contamination of the aquifer
  – Damage to manual drilling image
  – Make regulation difficult

• These risks can be mitigated by professionalizing the sector
Conclusions

• Private sector can be the engine for increasing access to groundwater
• Professionalization of the sector is critical
• Low cost options need to be considered where they are feasible
Thank You

Jon Naugle
jon.naugle@ri.org

Ibrahim Mamadou
imamadou@usaidpepam.rti.org