

NSRC RESEARCH OUTPUTS

5956

Water And Health Intervention Needed and Measured

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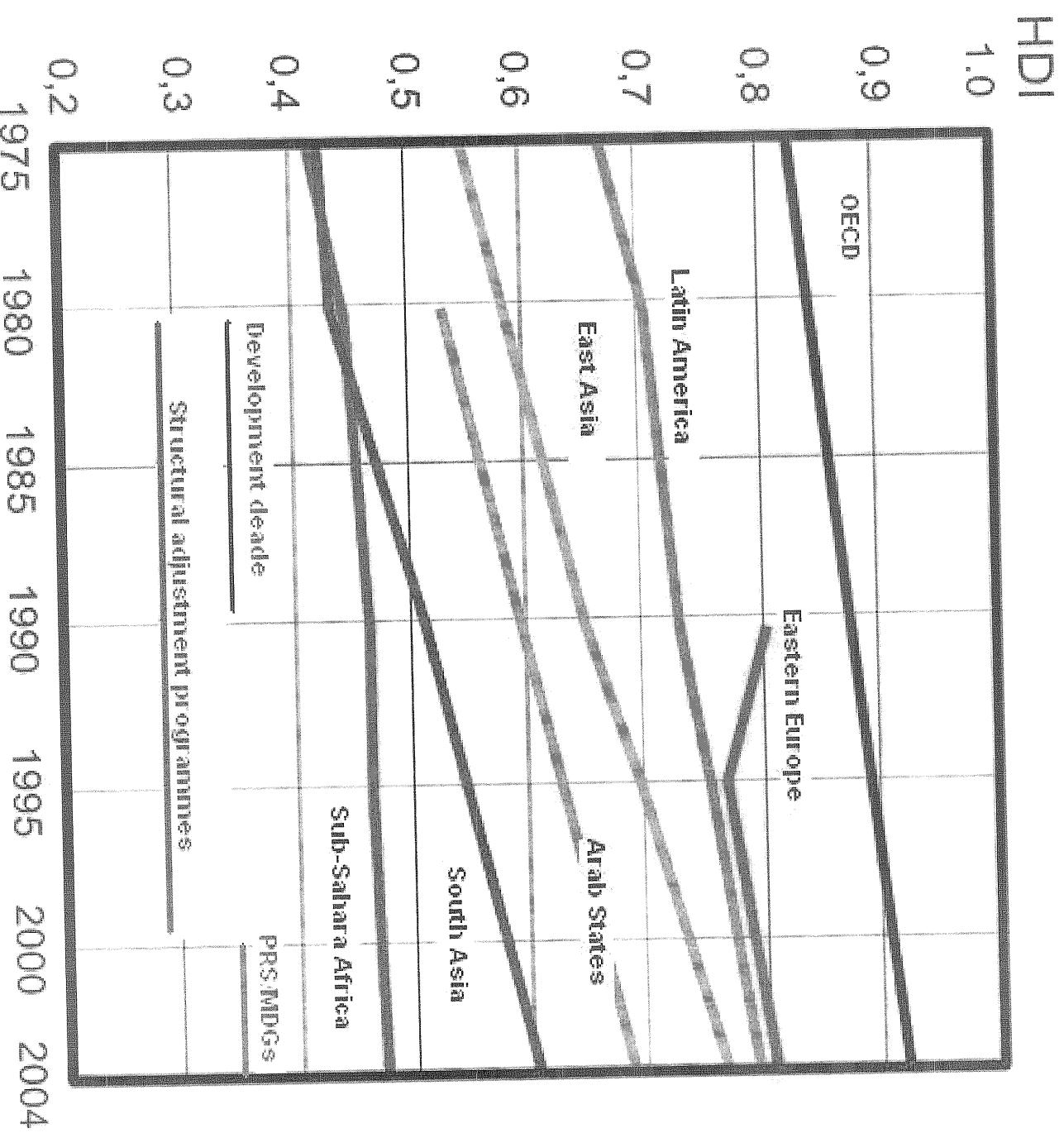
Human Sciences Research Council and
NORC University of Chicago

International Statistical Institute

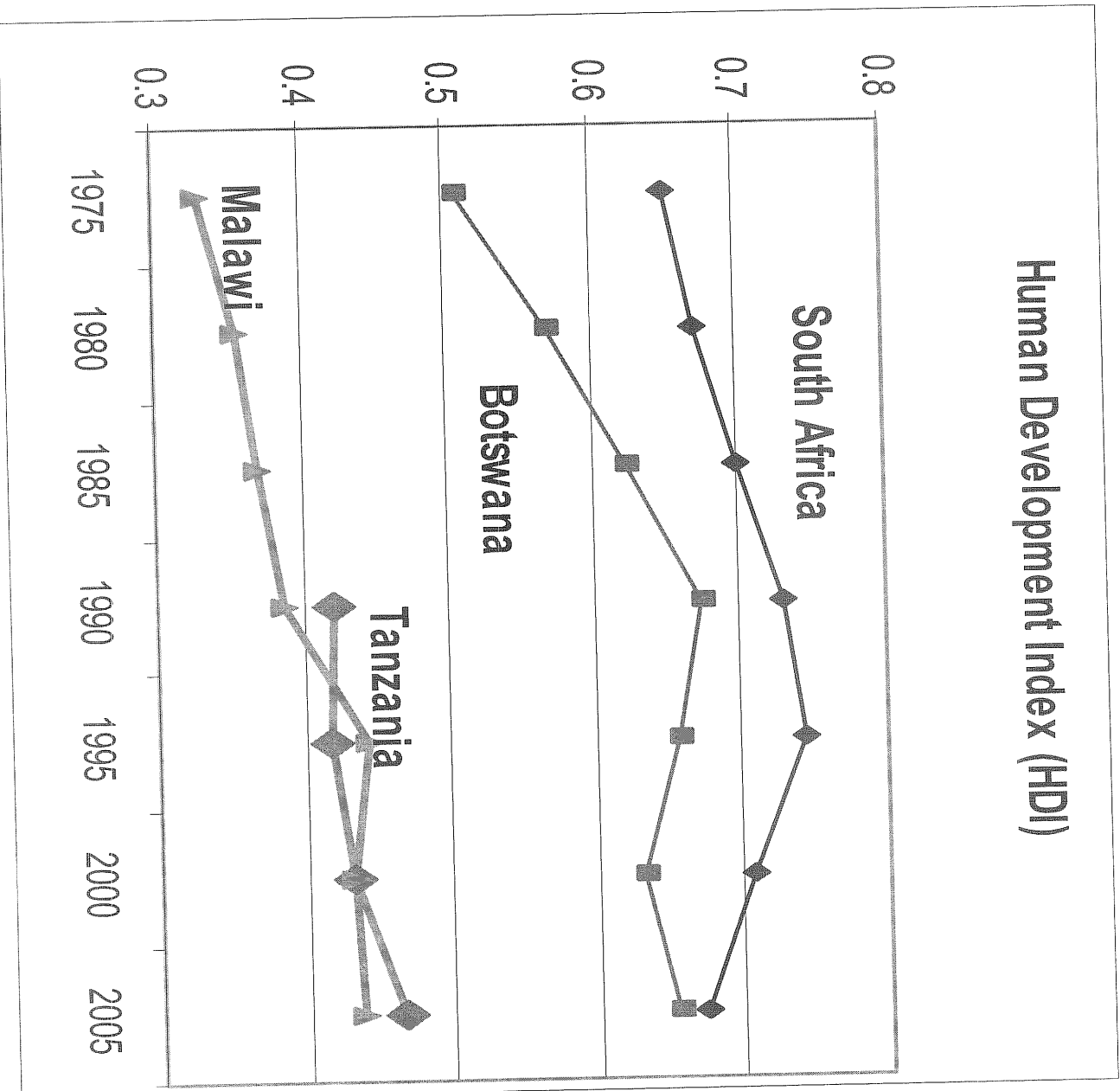
Durban, 18 August 2009

General progress but Africa is lagging

In the Human Development Index, SSA (purple line) is making the slowest progress.



Four countries reviewed in HSRC study: demonstrate slowing or declining progress except Tanzania



Under5 mortality declining slowly

- **Crucial trend: Although mortality rates among these children have declined globally from 146 per 1,000 in 1970 to 79 per 1,000 in 2003 (WHO 2005), the situation in Africa is strikingly different.**
- **As compared with other regions of the world, the African region shows**
 - **The smallest reductions in mortality rates and**
 - **The most marked slowing down of trend.**

More on Under 5 Mortality

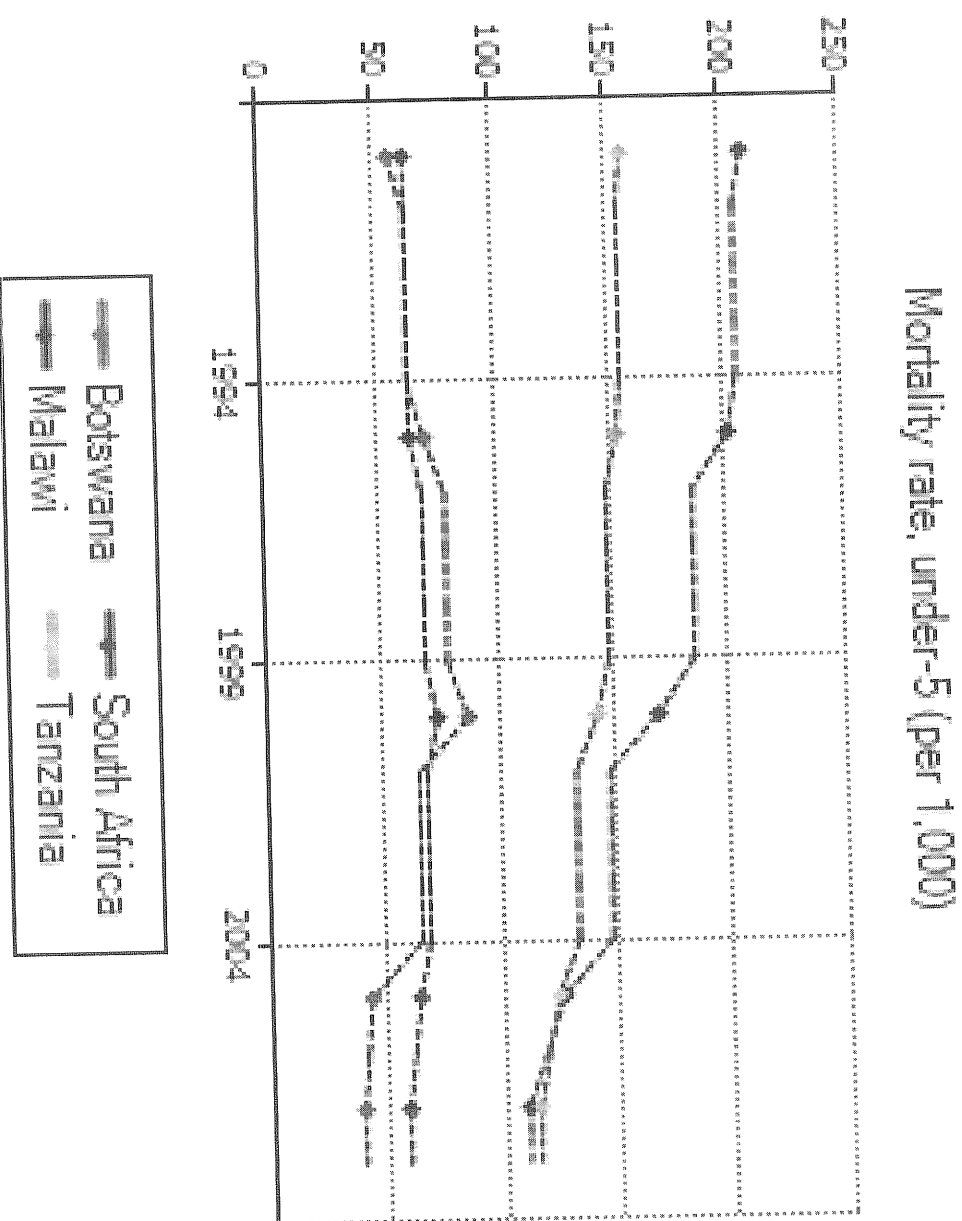
- **The gap between developed countries and Africa in under-five mortality rate is widening (WHO 2005).**
- **Most of these countries showing an increase in under-five mortality rate are from the African region (WHO 2005).**

Disease Intervention

- **Careful planning and evaluation of interventions to control cases and deaths due to diarrhea is crucial.**
- **Goal four of the Millennium Development Goals—to reduce under-five mortality by two-thirds by 2015, from the base year 1990—can be achieved in the African region.**

MDG Goal 4: Reduce under-5 mortality rate by two-thirds

HSRC study shows uneven progress in four countries in decline in infant mortality rated



Source : World Development Indicators

Determinants of Health

- “Health and its determinants are strongly influenced by the policies outside the health care sector...”
- Indeed health impact assessment involve a major study of these “external” factors.
- Critical “external” factors are sanitation, safe drinking water, and improved hygiene.

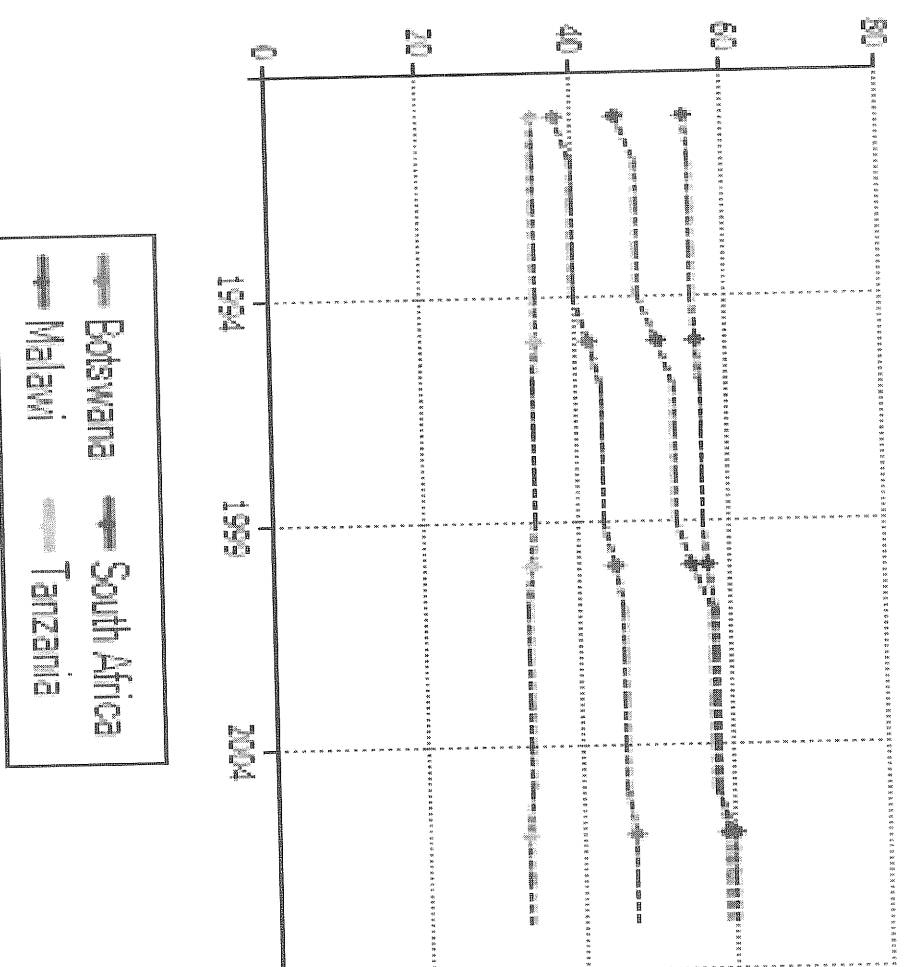
Background on Southern Africa

- Pattern most important: Almost 40 percent of all diarrhoea deaths in children under five worldwide occur in the African region
- Diarrhoea is preventable and treatable disease in the region with deliberate interventions.
- Large reductions in child mortality could be achieved with the implementation of know existing interventions to prevent or treat diarrhoeal diseases and to thereby reduce diarrhoea mortality.

External factor 1: Sanitation

Improved sanitation facilities (% of population with access)

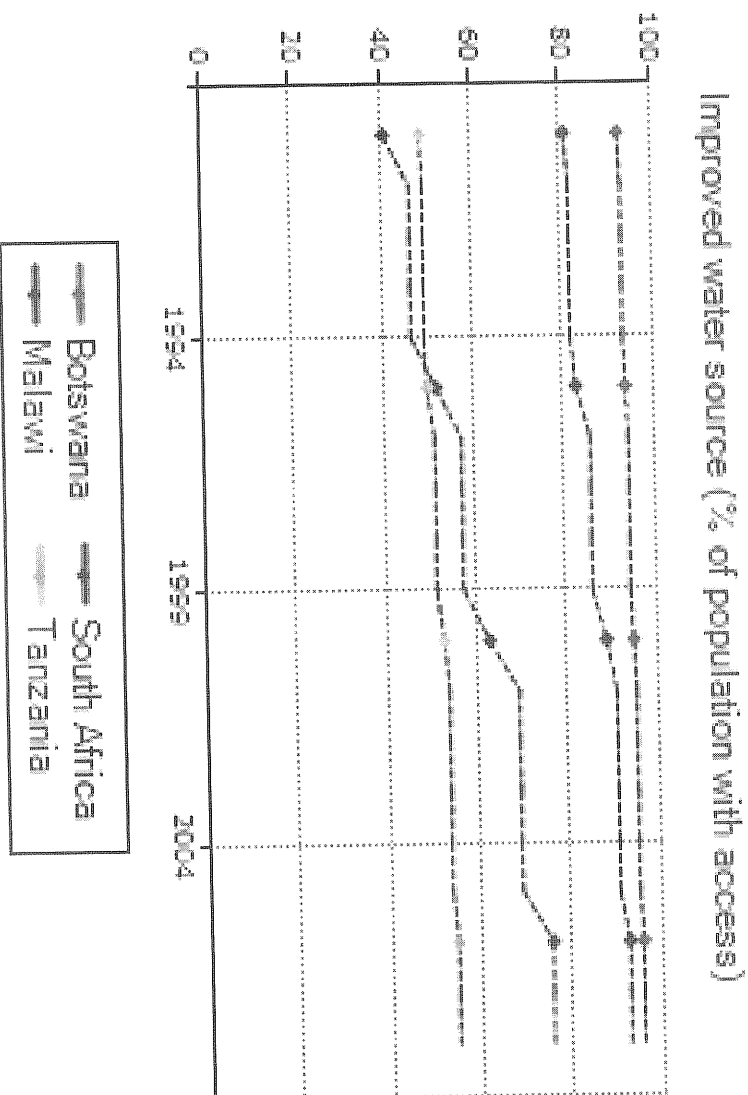
Very slow progress in implementing improved sanitation facilities



Source : World Development Indicators

External factor 2: Water

More progress in improved water facilities



Source : World Development Indicators

External factor 3: Hygiene

- The crucial variable which is not well measured;
- Poses methodological challenges;
- Washing hands with soap (or ash or even mud) dramatically reduces diarrhea;
- Particularly if undertaken by caregiver among under-5s.

HIV/AIDS Pandemic

- A factor that may contribute to this situation is the human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) epidemic in the region, but an underlying weakness of the implementation capacity of the health system is also likely to blame (Walker, Schwartländer, and Bryce 2002).

Questioning questionnaires

- Extraordinary challenge in developing questionnaires in health and hygiene practices;
- **Direct questions e.g. hand-washing / treating water invite “correct” answers often at variance to practice;**
- Possible solutions: improving questions to reduce normative factor e.g. “Do you feel it is necessary to treat water?” rather than “Do you treat your drinking water?”
- Or posing question differently (negatively): Please respond to the following statements: “It is not necessary to always wash hands after visiting toilets.”

Multi-method approach

- Alternatives could include observation schedules in interviews linked to questions e.g. “Please could you show me how you wash your hands” .
- Or combinations of observation and questions to establish proxies e.g. if hand-washing facilities are available.
- Final alternative on site observation which is very time demanding and small scale.

Application To Lesotho

- Background on Lesotho
- The MCC intervention
- Issues in methodology
- Questionnaires and Surveys
- Limitations on questionnaire responses
- Can better analysis resolve the issues?

Background on Lesotho

- Independent Black Mountain Kingdom
- Entirely Inside South Africa
- Never Conquered by Europeans
- A Sanctuary During Apartheid
- Very little fertile land
- Biggest Exports are Water and People
- Biggest Asset are its People

MCC Intervention

- Reduce Poverty Thru Growth
- Investments in Dam Infrastructure
- Renovating AIDS Clinics
- Improving Urban/Pari-Urban Water
- Adding VIP Latrines to Villages
- Providing Clean Reliable Water

Evaluation Methodology

- Sound Data Collection
- Guided By Program Success Indicators
- Counterfactual Inference Structure
- Randomization Whenever Possible
- Ethical Random Selection of Treatment
- Because of Scarcity of Resources
- Eventually Every Clinic/Village treated

Household Survey Component

- Invested in the Bureau of Statistics
- Continuous Multi-Purpose Survey
- Two Modules Health and Water
- Just Gone through Rigorous Questionnaire Development for Water Module
- Training and Pre-testing Being Done Now
- Fingers Crossed and Prayers Said

Household Survey Limitations

- Mostly Covered Already
- All parties are learning
- Self-Perception can be a Barrier
- Knowledge Limitations
- Cannot know the Engineering of Water Supply
- Sample Size and Timing
- Baseline or “Continuous-line”

Combined Analysis

- Tracking of Nonexperimental Indicators
- Deepen Interpretation
- Invest in Metadata Computer Systems
- Identify Treatment Turning Points
- Monitor and Clean Data as collected
- Begin Analysis Early and Practice
- Refine Questions and Data Collection

Lower, but Met, Expectations!

- Good Evaluation Theory Obviously!
- As Good Data Collection as Possible
- Close monitoring of Results to Adapt
- Reshape Sponsors Limitations
- Achieve what is possible

Many, Many Thanks

**• NGIYABONGA KAKHULLU
NGOKUNGIPIHA INDLEBE
KWENU, NIBE NOSUKU
OLUHLE!**

**• Thanking you all for your
presence and wishing you a
great conference**