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2014/HD05/18703U
PhD Student: Information Systems

• PhD Proposal Presentation
• 8\textsuperscript{th} June 2018
May Progress

• Resubmitted proposal for presentation to HDRC in June
• Instruments vs stakeholders
• Revisited study area focus
• Reviewed specific objective 1
• Supervised WDR work
Topic: working title

- Modeling the value of meteorological information in health sector policy analysis in Uganda
Problem

- Goals towards eradicating weather-sensitive diseases such as malaria remain unmet and weather information remains largely underutilized in a context where meteorological and health sectors have heavily invested in information systems (Connor et al., 2010; Kanagwa et al., 2015)
General Objective

• To develop a simulation model that demonstrates how utilization of weather and climate information would facilitate policy analysis in combating weather/climate related diseases
Specific objectives

- To investigate how the dynamics of weather patterns affect malaria prevalence.
- To design a generic stakeholder relationship model that traces health sector value from weather and climate information systems.
- To quantify and simulate the generic model that demonstrates the systemically persistent weather/climate-sensitive health challenges.
- To conduct model-based sensitivity analyses and “what-if” experiments in order to propose optimal systemic weather/climate and health sector policy changes.

Research questions

- What factors influence the value of weather and climate information in the health sector?
- How do stakeholders in weather, climate and health information systems relate in tackling weather and climate-sensitive health sector challenges?
- Why has the incidence of weather-sensitive diseases persisted in Uganda?
- What is required for Uganda to get the best health sector value from weather and climate information systems?
# Stakeholders

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Role/contribution in relation to Meteorological &amp; health Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village Health Teams</td>
<td>Usage/utilisation/demand/need &amp; disease prevalence</td>
</tr>
<tr>
<td>Households</td>
<td>Usage/utilisation/demand/need &amp; disease prevalence</td>
</tr>
<tr>
<td>District/Municipal/City Health Officials</td>
<td>Policy: Usage/utilisation/demand/need &amp; disease prevalence</td>
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<tr>
<td>Hospitals</td>
<td>Disease prevalence</td>
</tr>
<tr>
<td>UNMA</td>
<td>Collection, processing and supply</td>
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<tr>
<td>Demographic health surveillance sites</td>
<td>Disease prevalence</td>
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</tbody>
</table>
Study areas: regions G, I, A2, C.
Instruments: meteorological info supply side

- Themes:
  - Demographic data
  - Weather information dissemination to health sector/population
  - Stakeholder relationship
  - Appropriate information systems in place
Instruments: info demand/utilisation side

• Themes:
  – Demographic data
  – Weather effects on health
  – Weather information access
  – Accuracy
  – Comprehension
  – Utilisation/response
  – Flexibility of information systems
Conceptual framework

1. Low appreciation of weather information in combating the increased incidence of weather-related diseases
2. Increase capacity to manage, understand & respond to weather/climate information in health sector
3. Model-based health sector & meteorological information service policy analysis and
4. Sector-based data (health sector, meteorological service)
5. Reduction in weather-related disease incidence
Methodology

• Received feedback on methodology section from supervisors
  – Analysed research approaches
    • Math modeling
    • Design science research
    • Laboratory experiments
    • Experimental Simulation
    • Laboratory experiments
    • Field study/field experiments
    • Case study
    • Action research (SD falls here- changing structure of problem environment)
Linking Specific objectives with methodology

Specific objectives

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Methods

- Prob. Identification: Literature review/document analysis - reference modes/BOT graphs
  - output: review paper: traces the state of usage of weather information systems in health sector policy in Uganda
- Model building stage: Field study, case study, FGDs
  - a) Causal loop modeling - group model building
    - Eight-factor procedure relationship validation
    - clarity, quantity existence, connection edge existence, cause sufficiency, additional cause possibility, cause/effect reversal, predicted effect existence and tautology
  - Output- paper: Using SD to clarify weather information usage for the health sector: multi-stakeholder approach
  - b) Stock & Flow modeling
    - Case study
    - FGDs
    - Paper:
- Experimental simulation
- Model use/implementation & theory extension
  - Interface design to facilitate model use
  - Case study: FGDs
  - Application of SD in extending knowledge in of RBV, dynamic capabilities, Value engineering & decision theories
- Sampling procedure
  - Purposive & stratified random sampling
June 2018 Plans

• Present to HDRC – 15\textsuperscript{th} June 2018
• Incorporate feedback from HDRC
• Complete & pretest instruments
• Start data collection: specific objective 1
References


• Thank You