

## Action Plan

**Learner:**

**Student Number:**

**Course Challenge:** GEOG 470X

**Credit Value:** 5 credits

**Faculty Assessor:** Cherie Enns

### 1) Learning Outcomes & Assessment Criteria

- Learner is expected to explore a world region from either a human or physical geographic perspective, or a combination of both.

- 1) Identify, for further research, field problems & develop testable hypotheses.
- 2) Maintain a field journal, make relevant observations, and support the journal with appropriate photographic evidence collected in the field.
- 3) Identify and use a range of appropriate research techniques (ie: mapping, statistical analysis, GIS, participant observation, etc.) needed for completing a research project.
- 4) Combine primary and secondary source information into visual and written presentations.
- 5) Identify the larger significance of case study and field research, as well as the transferability of this research design & findings to new research situations.
- 6) Develop an appreciation for the regional geographic character of a world region, and be able to work effectively in a non-local and potentially foreign environment.

### 2) Assessment Method

-Portfolio

### 3) Assessment results on transcript will be:

-CR/NCR

### 4) Action to be taken by Assessor/Advisor

- Review technical report, reflection paper & evidence provided to determine field work and research accomplished while working in Tanzania in relation to course outcomes and assessment criteria.

### 5) Action to be taken by Learner:

*Portfolio organization:*

- Title page
- Table of Contents
- Resume
- Educational Plan
- 5-7 page reflective paper (may include sources)
- 13-15 page technical paper with 10-12 sources (mixture of books and academic articles, referencing evidence and field work as appropriate)
  
- List of evidence
- Evidence in appendix

### Specific evidence to be submitted:

Evidence of learning and utilizing field techniques while studying in Tanzania including:

- Journal entries

- photos
- maps
- Confirmation letter from ARDHI University

**6) Potential sources of research:**

Dodman, David, Kibona, Euster, and Kiluma, Linda. 2011. *Tomorrow is too Late: Responding to Social and Climate Vulnerability in Dar es Salaam, Tanzania*. Cities and Climate Change: Global Report on Human Settlements.

<http://www.unhabitat.org/downloads/docs/GRHS2011/GRHS2011CaseStudyChapter06DaresSalaam.pdf>

Howe, Vicki. 2001. *Local community training and education in southern Tanzania- a case study*. Marine Policy. Volume 25, Issue 6, p 445-455.

Kithiia, Justus. 2010. *Climate change risk responses in East African cities: need, barriers and opportunities*. Current Opinion in Environmental Sustainability. Volume 3, Issue 3, p 176-180.

<http://www.sciencedirect.com/science/article/pii/S1877343510001417>

Madulu, Ndalaha F. 2004. *Assessment of linkages between population dynamics and environmental change in Tanzania*. Institute of Resource Assessment, University of Dar es Salaam. AJEAM-RAGEE Volume 9 p 88-102. [http://onecan.net/Info/Info\\_files/Pop%20and%20environmental%20linkage.pdf](http://onecan.net/Info/Info_files/Pop%20and%20environmental%20linkage.pdf)

Sattler, Michael, Mtasiwa, Deo, Kiama, Michael, Premji, Zul, Tanner, Marcel, Killeen, Gerry, Lengeler, Christian. 2005. *Habitat characterization and spatial distribution of Anopheles sp. Mosquito larvae in Dar es Salaam (Tanzania) during an extended dry period*. Malaria Journal 4:4

<http://www.biomedcentral.com/1475-2875/4/4>

**7) Date of assessment:**

Winter 2012 semester

## Outlines

### **Educational Plan**

I am currently pursuing my BSc in Geography with a minor in Business. I have completed three years of part-time studies at UFV and am part-way through my academic third year. Because I currently work full time, I am only able to take 2 to 3 courses per semester, so I hope to finish my degree within more 2 years. After completing my BSc degree, I plan on attending BCIT to obtain either the Sustainable Business Leadership certification or the Sustainable Energy or Sustainable Resource Management certification. My current administrative position, as well as my business education background, has given me the skillset and knowledge required to continue my environmental and sustainable resource management related work in a business setting. While working in Tanzania, I affirmed that I enjoy working on research collection and analyzing data to create projects and reports. I have a strong passion for environmental change and sustainability, and while in Tanzania, gained a strong urge to help others and expand my horizons, potentially globally. I hope to continue my work with Africa in the future in a resource management, as well as human and environmental impact capacities.

### **Technical Report**

#### ***Abstract***

- state issue (sea-level rise causing increase in stagnant water levels and associated increases in spread of disease and polluted, garbage-filled water)
- approach (basic methodology and data utilized and analyzed)
- solutions (new building materials, relocation strategies, water re-direction, updating infrastructure and drainage etc.)
- main contributions to paper

#### ***Introduction***

- the problem (sea-level rise causing increase in stagnant water levels and associated increases in spread of disease and polluted, garbage-filled water)
- this is important for many low-lying coastal communities in the developing world and will continue to impact these areas as global climate increases and sea-levels rise unless preventative measures and education are increased
- this is difficult to approach due to the nature of life within informal settlements in third world countries and the lack of resources available. Those who enter this problem with the mindset of changing everything do not take into consideration the deep-seeded roots and traditions found within the communities and lives of the people living within informal settlements.
- this is a complex issue with potentially many solutions, but a deep understanding of the social, environmental, political, health and economic issues facing the people help to provide a more viable solution. Information is not always complete or without bias.
- Utilization of maps and previously collected data and statistics to determine the potential impacts of climate change and sea-level rise. Utilization of previously collected data to determine the severity of the water pollution within stagnant water and the spread of diseases.

-Limitations occurred on time and the enormity of reviewing every single home within the informal settlements. Not all building materials are the same or constructed in the same manner. Variations in services and amenities available to residents within rural and urban areas.

### ***Research Methodology***

-The utilization of ArcGIS and GIS files to produce maps showing various areas of risk and vulnerability to flooding due to climate change.

-Visits to Tanzania Water and Environmental Sanitation (DAWESCO/DAWASCO) headquarters to obtain maps of the city's current drainage and water pipeline systems which were utilized using AutoCAD. The maps were created to display different variables, such as informal settlements, flood-prone areas within informal settlements, varying elevations, and land and vegetation types in Dar es Salaam.

-The areas deemed "at risk to flooding" were visited to observe current living conditions and building materials used in informal settlements.

-Individual research was conducted on the most popular methods of building homes in informal settlements and associated costs, as well as new and innovative methods of building homes in informal settlements such as inter-locking, soil stabilized bricks.

-Further individual research was conducted on various aspects of human, socio-cultural, economic & environmental impacts of climate change and rises in sea-level such as: increases in stagnant water and the transmission of mosquito-borne diseases such as malaria and dengue; increased flooding and the spread of hazardous materials, garbage and unsanitary water; displacement and re-settlement of those living in informal settlements within flood prone areas; and increases in costs associated with the repairs of the already horrible basic infrastructure.

-The utilization of sea-level rise data and statistics helped to develop flooding timelines.

-Utilization of water sample data to determine levels of pollution in stagnant water.

### ***Results & Findings***

The grossly underdeveloped basic infrastructure of Dar es Salaam and Tanzania, including a lack of sufficient drainage, waste removal and waste management, have all contributed to the presence of stagnant water. Increases in global temperatures will have many consequences and impacts on climate such as the potential for increases in sea-level and extreme weather events and storm activities. Those living in informal settlements are already the most vulnerable and will face further negative impacts with increases in global temperature and sea-level.

### ***Discussion & Related Work***

-Discuss building materials ability to withstand rises in water levels and the strength of different types of shelter within informal settlements

-Discuss possible preventative measures and preparedness that is already occurring in the area and options elsewhere that could be utilized

-Discuss stagnant water levels and what could be done to alleviate some of this problem

-identify potential inaccuracies/bias in research and areas where further research could enhance findings

-include other studies done in Dar & Tanzania that are similar or have utilized some of the same issues and findings

### ***Conclusions***

-outcomes of testing and research and general observation summary and suggestions; aiming to solidify original claims

***Future Work***

- Work related to preventative measures and preparedness to rising sea-levels and the survival of the informal settlements
- Further investigation into the different levels of chemicals and pollution in stagnant water within urban and rural settings

***Acknowledgements***

- contributions; those I worked with at ARDHI & from UFV

***Citations******Appendices***

- only if necessary for extensive charts and tables

***Journal***

Evidence focusing on: increased levels of stagnant water within low-lying areas and informal settlements due to climate change & increased sea-levels; the spread of disease, infection and poor living conditions due to increases in stagnant water; lack of adequate drainage and infrastructure which causes decreased standards of living and increased health, economic, environmental & social issues; lack of adequate waste removal systems causing an increase in poor living conditions and the spread of disease; lack of access to clean drinking water causing increases in the spread of disease; increase in population growth and informal settlement development causing decreased standards of living