

Project Update: September 2013

Activities undertaken and objectives achieved

While in Mauritius in July and August 2013, I presented preliminary results from my research on rainfall to experts in the local water sector. Characterising long-term rainfall patterns across space and time and further understanding the effect of climate on rainfall variability in Mauritius are important prerequisites for quantifying changes in surface water availability under varying conditions climate and demand, which is arguably the most useful part of my research, as far as local water managers are concerned. The major findings so far include a downward shift in rainfall totals in the late 1980s and linkages between annual totals and major large scale climatic indicators the El Niño Southern Oscillation (ENSO) and the Subtropical Indian Ocean Dipole (SIOD).

I spoke at the 5th International Conference on Climate Change: Impacts and Responses in Port Louis in July (photo below). I also presented my results at the Mauritius Meteorological Services, where a local meteorologist gave me a new perspective on the results of my regression model on spatial variability of rainfall. I spoke to one of the senior hydrologists at the Mauritius Water Resources Unit about my work and sought his counsel in regard to the stream flow analysis that I am planning to conduct for my last chapter. He recommended that I select stream flow stations on natural streams (as opposed to man-made canals) and that they should preferably be located near the source, where the climate signal was arguably “purer” i.e. the water is less likely to have been influenced by humans. He gave me specific recommendations as to which stations would meet these criteria.

I obtained daily stream flow data for four reliable stations over 60 years, which will enable me to look into changes in stream flow and subsequent consequences on reservoir inputs over time in relation to climate availability. I also collected and compiled long term rainfall data from the Mauritius Meteorological Services, and the Ministry of Agro Industry. I took hundreds of photos and worked with Zainab, a graduate from University of Mauritius to transcribe the data back into excel. A meteorologist from the Mauritius Meteorological services gave me a book entitled *Weather and Climate of Mauritius* (Padya, 1989) that has been out of circulation for many years, and is arguably the only thorough piece of literature on the weather and climate dynamics in my study area. I am half way through it and am aware that it is possibly the most important piece of literature I can find for my research on Mauritius and similar small mountainous tropical islands. Finally, I was invited to give a talk to the Mauritius Wildlife Foundation, whose interest lies in changing rainfall patterns and related effects on endangered indigenous species. I was reminded, once again of the complex politics involved in accessing scientific data in developing countries. My analysis is in progress.



Figure 1: Transcribing data at the Mauritius Sugar Industry Research Institute (MSIRI). My assistant Zainab Oderuth (right) at the Mauritius Sugar Industry Research Institute (MSIRI) helping transcribe Meteorological data into MS Excel.



Figure 2: Caroline Staub by an old sugar estate chimney at l'Unite Mauritius



Figure 3. View from a mountain top in the South East. Mauritius is a small volcanic island in the SW Indian Ocean, where extensive land cover modification has taken place (here showing sugar cane fields at the bottom of the hill)