

FOUNDATION FOR ENVIRONMENT CLIMATE AND TECHNOLOGY

Our Progress during 2006

Having established our office in Digana in August 2005, it took us well into 2006 to settle into the new offices. We have settled well with the support of the Director of the HAO&M Division of the Mahaweli Authority and his staff. We have also continued our work in executing grants, collaborating on new proposals, contributing to scientific and technical meetings, conferences and journals. Here is a review of all this.

Personnel: In January 2007, Zeenas Yahiya and Upamala Tennakoon completed 5 years of engagement, Janaki Chandimala completed 4 years of service, and Manjula Siriwardhana is on her 3rd year counting service at FECT and its predecessor research group at the Natural Resources Management Services (NRMS). Eng. Badra Nawarathna of the Mahaweli Authority was assigned to work at FECT from December 2005 and has worked with us through the year. Yoosuf Ashraj started his B.S. (Eng.) at University of Moratuwa and left the service as a Research Assistant. Amal Tilakaratne joined us as a research assistant. M.R.A. Siraj left to pursue his M.S at the Post-Graduate Institute of Science at Peradeniya full-time at the end of 2006. Dr. Sarith Mahanama joined FECT as an advisor during the year.

Grants: Our collaborative work with the International Research Institute for Climate and Society (IRI) continued on the *Climate and Malaria Project* funded by NOAA. We contributed to papers and reports and in engagement with the personnel of the Anti-Malaria Campaign. We also contributed to the completion of previous projects on *Climate and Disasters* and on *Adaptation and Impact Assessment to Climate Change in the Plantation Sector*. We continued to develop tools for the Water Resources Sector building on our concluded project *on Seasonal Climate Prediction for Water Resources Management* with the Mahaweli Authority of Sri Lanka (MASL) after the secondment of Eng. Badra Nawarathna from the MASL. We prepared prediction results for the Kelani river basin.

Proposals submitted:

- Assessment of Drought Disaster Risk in Sri Lanka and its mitigation through Rainwater Harvesting – NSF Sri Lanka collaborating with the University of Ruhuna and the Lanka Rain Water Harvesting Forum.
- Predictability of influences of climate change and variability on Rainfall, Streamflow and Evaporation in the Mahaweli, Walawe and adjacent basins – NSF Sri Lanka collaborating with the Mahaweli Authority and Irrigation Department.
- Adaptation to climate change through river basin management and coping with climate variability demonstration in Mahaweli basin in Sri Lanka - Outline proposal and statement of capabilities of ACCCA pilot action collaborating with the University of Peradeniya and the Mahaweli Authority.
- Development of Drought hazard risk assessment methodology and tools for tropical Asia Pacific region under climate variability and change with case studies in Sri Lanka – APN collaborating with Tamil Nadu Agricultural University.

- Assessment of hydrological impacts of climate change and variability in Sri Lanka – IFS, Sweden
- Developing a GIS model to predict malaria epidemic risk and consequences of climate change in the upper Mahaweli basin – NSF collaborating with the Anti-Malaria Campaign
- Analysis of regional and seasonal impacts of weather and climate on dengue risk in Sri Lanka - National Dengue Control Unit.

Papers published:

- Zubair, L., Ralapanawe V., Tennakone, U., Yahiya, Z., and Perera, R., Natural Disaster Risks in Sri Lanka: Mapping Hazards and Risk Hotspots, Chapter 4, in *Natural Disaster Hotspots Case Studies*, Washington, DC: World Bank 2006.
- Zubair, L. and Janaki Chandimala, Epochal Changes in ENSO-Stream flow relations in Sri Lanka, in press, *Journal of Hydrometeorology*. 7(6), 1237-1246

Papers Under Review:

- March 2006: Zubair, L., M. Siriwardhana, J. Chandimala, and Z. Yahiya., The predictability of Sri Lanka Climate based on ENSO, *International Journal of Climatology*
- Chandimala, J. and L. Zubair, Predictability of streamflow and rainfall based on ENSO for Water Resources Management in Sri Lanka, *Journal of Hydrology*

Papers In Preparation:

- Climate Change Assessment for Sri Lanka
- Topography based interpolation of Surface Temperature
- Climate Change impact on the hydrology of Kelani River.
- Seasonality and Spatial Variation of Malaria in Sri Lanka in relation to Climate

Conference Abstracts and Proceedings

- Siriwardhana M., Chandimala J., Zubair L., ENSO influences on the mean temperature in Sri Lanka, accepted to the 62nd annual scientific sessions of Sri Lanka Association for the Advancement of Science. 2006.
- Chandimala J., Siriwardhana M., Zubair L., Topographically informed high resolution temperature estimates for Sri Lanka, accepted to the 62nd annual scientific sessions of Sri Lanka Association for the Advancement of Science. 2006.
- Chandimala, J., U. Tennakoon, Manjula Siriwardhana and Zubair, L., Topographically Informed Interpolation of Temperature in Sri Lanka, International conference on Third National Symposium on Geo-Informatics, vol. 1, pp 51-57, August 2006.

Reports:

- L. Zubair (PI), S.J. Connor, N. Ward, J. Shaman, M. Stieglitz, M. Cane, H. Yang, G. N. L. Galapaththy, S. Mahanama, H.M. Faizal, U. Tennakoon, Z. Yahiya, S. Razick, M. Siriwardhana, Third Annual Reports on Analysis of Impacts of Climate Variability on malaria transmission and the development of an early warning system, *Progress Report to NOAA/OGP*. July 2006

Posters:

- Climate Calendar for Sri Lanka, Zeenas Yahiya *et al.*

Publishing:

Catalogue of FECT activities
Book of Posters

Information Technology and Website development:

Tsunami Relief, Recovery and Rehabilitation - <http://www.recoverlanka.net>
Website development for FECT - <http://www.geolanka.net>
Website Development for SLMOHN - <http://www.climate.lk>
Website Portal Development for IRI Sri Lanka - <http://www.columbia.edu/~lz144/slmon/>
Interactive Map-server for Sri Lanka - <http://149.166.110.135/website/srilanka/viewer.htm>
Climate and Hydrological Database using the IRI Data Library for Internal use

Presentations:

January 2006: Zubair, L., Advances in Climate for River Basin Management, Mahaweli Authority of Sri Lanka, Headworks Administration and Operations Management Division, Digana, Sri Lanka, January 4, 2006

Administration: Additional bank account opened at Hatton National Bank, Akurana. Financial management of the bank account at Peoples Bank has been smooth. The accounts were drawn up by Zeenas Yahiya. Our Auditors, Anzari and Co., has reported on a health state of financial management in the last Audit conducted until May 2006. The Annual report has been submitted via our company secretary, Ralapanawe Associates, to the Registrar of Companies.

Collaborations: We had productive collaborations with personnel attached to Mahaweli Authority of Sri Lanka (MASL), International Research Institute for Climate and Society (IRI), University of Peradeniya (UOP), Open University of Sri Lanka (OUSL), Anti Malaria Campaign (AMC), International Water Management Institute (IWMI), National Aeronautics and Space Agency (NASA), the University of Ruhuna (UoR), SL Rainwater Harvesting Forum (SLRHF), Natural Resources Management Centre (NRMC), Natural Resources Management Services (NRMS) and Tamil Nadu Agricultural University (TNAU).

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