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# FOUNDATION FOR ENVIRONMENT CLIMATE AND TECHNOLOGY

## Progress - 2015

### SUMMARY

**Publications and Conferences:** Publications related to the completed AgMIP project appeared in a book collection for AgMIP. Drafts of papers have been prepared on climate, water, infectious diseases and agriculture. We compiled the proceedings of the Pinga Oya Symposium which we organized in 2013 with supplementary material. Our staff participated and presented at Local and International workshops in Maldives, Indonesia, Colombo and Kandy.

**Projects and Proposals:** Our work on projects for the PEER-Climate and Water, PEER-Drought, RAWI-Wind, Masters on Sustainable Development at University of Peradeniya continued. Our contributions to setting up of the Masters in Development Practice and the PEER cycle 1 project on climate predictions for water resources in Sri Lanka and Maldives essentially came to a close this year. Our work on the PEER Drought project picked up this year. For the RAWI project, we undertook work on analysis of wind data. Three concept notes and a proposal were submitted to the PEER and APN programs. Our PEER-Hazards proposal was granted and work commenced on this.

**Operational Work:** We continued to provide climate services operationally for the Mahaweli Authority and for Maldives. Weather observations were continued in our offices at Digana and Akurana. During this year, the generation of these reports were partially automated thus reducing the time needed, improving accuracy and speed. Automated climate report generation was extended to Maldives and Comoros as well. Our data resources for Maldives were incorporated into the Data Library.

**Staff and Training:** Four interns from technical tertiary institutes were provided the opportunity to obtain exposure at FECT. We also obtained the services of subject-experts to complete the MDP project.

**Communication and Websites:** We have prepared new posters for Maldives in particular and compiled these into a poster book that is being sent to key partners. We developed a mailing list for Sri Lanka and Maldives. There was a substantial technical development in terms of blogs, twitter, and facebook accounts for Sri Lanka, Maldives and Comoros. Our websites have been made more compliant of internet standards.

**Collaboration:** We continued to collaborate with many partners locally and internationally, in USA, India, Maldives, Comoros and Indonesia. We had initial contacts with a visiting delegation from Zanzibar.

**Administration and IT:** Our accounting systems, audits and company reporting went off without a hitch. We continued to make our written resources: books, files, journals and reports more accessible. Our IT systems have kept up to the demands of additional staff and have been upgraded. The video communication system was set up. We are working on cloud based accessibility to information resources.

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## EXTENDED SUMMARY

### **Peer Reviewed Journal Publications and Book Chapters**

- Lareef Zubair, Sarath P. Nissanka, W.M.W.Weerakoon, Dumindu I. Herath, Asha S. Karunaratne, A. S. M. Prabodha, M. B. Agalawatte, Rasnayaka M. Herath, S. ZeenasYahiya, B. V. R. Punyawardhene, Janan Vishwanathan, Punya Delpitiya, A. Erandika N.Wijekoon, Janaka Gunaratna, Sewwandhi S. K.Chandrasekara, P.Wickramagamage, K. D. N.Weerasinghe, Champa M. Navaratne, Ruchika S. Perera, Asela I. Gunesekara, G. M. Pradeep Kumara, Daniel Wallach, Roberto O. Valdivia, and Sonali McDermid (2015). **Climate Change Impacts on Rice Farming Systems in Northwestern Sri Lanka. (Chapter 10)**. In *Society of Agronomy, Crop Science Society of America, and Soil Science Society of America* (39). Imperial College Press
- Sonali P. McDermid, E. Wijekoon, P. Agalawatte, L. Zubair and *et al.* (2015). **The AgMIP Coordinated Climate-Crop Modeling Project (C3MP): Methods and Protocols. (Chapter 8)**. In *Society of Agronomy, Crop Science Society of America, and Soil Science Society of America* (31). Imperial College Press.
- McDermid, S. P., Guntuku Dileepkumar, K. M. Dakshina Murthy, S. Nedumaran, Piara Singh, Chukka Srinivasa, B. Gangwar, N. Subash, Ashfaq Ahmad, Lareef Zubair, and S. P. Nissanka. (2015). **Integrated Assessments of the Impacts of Climate Change on Agriculture: An Overview of AgMIP Regional Research in South Asia**. In *Society of Agronomy, Crop Science Society of America, and Soil Science Society of America* (18). Imperial College Press.
- Rosenzweig, C., J. W. Jones, J. R. Hatfield, J. M. Antle, A. C. Ruane, K. J. Boote, P. J. Thorburn, R. O. Valdivia, C. H. Porter, S. Janssen, K. Wiebe, C. Z. Mutter, S. Lifson, E. Mencos Contreras, I. Athanasiadis, G. Baigorría, D. Cammarano, K. Descheemaeker, G. Hoogenboom, J. Lizaso, S. McDermid, D. Wallach, S. Adiku, A. Ahmad, Y. Beletse, G. Dileepkumar, J. Kihara, P. Masikati, P. Ponnusamy, N. Subash, K.P.C. Rao, L. Zubair, and AgMIP Collaborators around the world. (2015). *AgMIP Technical Report USDA 59-3625-1-745*.
- Gunaratne, Ajith and L. Zubair (2015). **Fine Scale Evaluation of Tropical Wind Climatologies Using a Mass Consistent Model**. *International Journal of Numerical Methods and Applications*, 14 (2) 77-105, December 2015, [http://dx.doi.org/10.17654/IJNMADec2015\\_077\\_103](http://dx.doi.org/10.17654/IJNMADec2015_077_103)

### **Books**

- Zubair, L., Z. Yahiya, P. Wickremagamage, Y. Indrachapa, S. Ashraj, J. Viswanathan and D. Gunasekara. *Proceedings of the Symposium on Pinga Oya*. Akurana: News-View, Sri Lanka. (In Press).

### **Technical Reports**

- Zubair, L., Z. Yahiya, P.H.D. Kusumawathie and J. Vishwanathan. Managing Emerging Infectious Diseases in Kandy with an Eco-Health Approach, Project Report to Master of Development Practice, University of Peradeniya, FECT Technical Report 2015-01: April 2015.
- Zubair, L., Z. Yahiya, C. Gunaratne, J. Vishwanathan, P. Agalawatte and U. Rathnayake. Climate and Water Resources Management: With Case Studies in Sri Lanka, Project Report to Master of Development Practice, University of Peradeniya, FECT Technical Report 2015-02: October 2015.
- Agalawatte, P., U. Rathnayake, Z. Yahiya and L. Zubair. The Climate over Sri Lanka up to the Yala of 2015. Foundation for Environment Climate and Technology, Digana, FECT Technical Report 2015-03: October, 2015.
- Foundation for Environment Climate and Technology (2015). Climate of Maldives and Its Impacts: Posters from FECT and Partners. Foundation for Environment Climate and Technology, Digana, FECT Technical Report 2015-04: November 2015.
- Zubair, L., Z. Yahiya, M. Dharmadasa, S. Chandrasekera, A. Kamiss, and P. Agalawatte. Rice and Climate in Sri Lanka: Impacts, Adaptation and Food Security, Project Report to Master of Development Practice, University of Peradeniya, FECT Technical Report 2015-05: December 2015.

## Conference Abstracts

- Yahiya, Z. **Relative roles of climate and societal factors in water scarcity and flooding in Sri Lanka and Maldives and its implications.** 2015 International Conference on Green Development in Tropical Regions, Andalas University, Indonesia. 28<sup>th</sup> – 31<sup>st</sup> October 2015.
- Zubair, L. **Climate Variability and Change in the Tropical Indian Ocean Islands: Implication for Water Security and Green Development.** 2015 International Conference on Green Development in Tropical Regions, Andalas University, Indonesia. 28<sup>th</sup> – 31<sup>st</sup> October 2015.
- Zubair, L. **Environmental Management Challenges under Rapid Urbanization: Lessons from Pinga Oya catchment of Sri Lanka's Mahaweli River.** Eighth International Perspective on Water Resources and the Environment (IPWE) conference organized by the American Society of Civil Engineers (ASCE) and the Environmental and Water Resources Institute (EWRI) to be held in Colombo, Sri Lanka in January 2016.
- Agalawatte, P. **Intra-Seasonal Climate Predictions for Water Resources Management in Sri Lanka.** Eighth International Perspective on Water Resources and the Environment (IPWE) conference organized by the American Society of Civil Engineers (ASCE) and the Environmental and Water Resources Institute (EWRI) to be held in Colombo, Sri Lanka in January 2016.
- Yahiya, Z. **Operational Island-Scale Water Scarcity Assessment for the Maldives.** Eighth International Perspective on Water Resources and the Environment (IPWE) conference organized by the American Society of Civil Engineers (ASCE) and the Environmental and Water Resources Institute (EWRI) to be held in Colombo, Sri Lanka in January 2016.

## Workshops / Conferences

- March – April, 2015 – Prabodha Agalawatte participated at the training workshop on [Climate Change Downscaling Approaches and Applications](#) (CCDAA) organized by the United Nations University-Institute for the Advanced Study of Sustainability (UNU- IAS), Japan collaboratively with the Sri Lanka Institute of Information Technology (SLIIT), Sri Lanka from 30<sup>th</sup> of March to 3<sup>rd</sup> of April 2015 at SLIIT Metro campus, Colombo.
- May 2015 - Janan Viswanathan attended the *Masters in Development Practice (MDP) Orientation 2015* held at the Department of Economics and Statistics, University of Peradeniya on May 16<sup>th</sup> 2015.
- September 2015 - A *Workshop for FECT staff and Collaborators* was held at the Digana Resort in Rajawella to Brainstorm on past and on-going projects, common issues, review work to fix problems and improve work and working conditions, to identify priorities and to draft a strategic plan for FECT for the following year, on 7<sup>th</sup> September, 2015.
- September 2015 – Lareef Zubair, Prabodha Agalawatte, Janan Viswanathan and Zeenas Yahiya participated in the *Workshop on Climate and Water Scarcity in the Maldives*, at the Maldivian National University, Male, Maldives on 13<sup>th</sup> September 2015.
- September 2015: Lareef Zubair, [Monsoons and the ITCZ: the annual cycle in the Holocene and the future.](#)
- October 2015 - Lareef Zubair and Zeenas Yahiya participated at the 2015 [International Conference on Green Development in Tropical Regions](#), organized by Andalas University, Indonesia held in West Sumatera, Indonesia from 28<sup>th</sup> – 31<sup>st</sup> October 2015.

## Presentations

- Zubair, L. “Environmental Threats to Kandy, the Mahaweli river basins and Sri Lanka” at Kandy American Corner for the World Water Day organized by USAID in Kandy, on March 21<sup>st</sup> 2015.
- Zubair, L. “Climate, Water Security and Dengue in the Maldives” at Columbia University Water Center, New York, in August 2015.
- Zubair, L. "Climate Variability and Change in the Tropical Indian Ocean Islands: Implication for Water Security and Green Development" at the *2015 International Conference on Green Development in Tropical Regions*, organized by Andalas University, Indonesia held in West Sumatera, Indonesia, from 28<sup>th</sup> – 31<sup>st</sup> October 2015.
- Yahiya, Z. “Relative roles of climate and societal factors in water scarcity and flooding in Sri Lanka and Maldives and its implications” at the *2015 International Conference on Green Development in Tropical*

*Regions*, organized by Andalas University, Indonesia held in West Sumatera, Indonesia, from 28<sup>th</sup> – 31<sup>st</sup> October 2015.

- ***FECT Review Meeting at Digana Resort, Digana Rajawella, September 07<sup>th</sup> 2015.***

- Zubair, L., “Use of Climate Information for Water and Environmental Management in the Mahaweli River Basin since 2000”.
- Agalawatte, P., “Climate Monitoring and Predictions for the Maldives”.
- Agalawatte, P., “Climate Projections for Sri Lanka based on CMIP5 GCMs”.
- Viswanathan, J., “Weather Monitoring, and Website Development for FECT”.
- Ratnayake, U., “Water Scarcity Assessment for Maldives”.
- Sandamali, I., “Analysis of Climate and Dengue for the Maldives”.
- Kamiss, A., “Recent Disaster History Analysis in Sri Lanka”.
- Gunaratne, C., “Water Resources in Sri Lanka”.
- Dharmadasa, M., “Overview of Minor Export Crops in Sri Lanka”.
- Shobana, K., “Computerized Accounting and Sinhala and Tamil typing”.

***Workshop on Climate and Water Security in the Maldives, at Maldives National University, Male, Maldives, 13<sup>th</sup> September 2015.***

- Zubair, L., “Introduction to the Workshop and Welcome”.
- Zeenas Yahiya, “Introduction to the Poster Presentations”.
- Agalawatte, P., “The Monthly Climate Advisory from FECT/MMS/IRI: Monitoring Weather and Climate for Maldives”.
- Zubair, L., “Climate Science for the Maldives in Relation to Water Scarcity”.

***Grants Ongoing***

- ***MDP***: Launching a Masters in Development Practice at University of Peradeniya, *MacArthur Foundation*, FECT component - FECT shall develop curricula for the course on Climate and Society; support teaching; and work with government, non-governmental, development and private sector organizations in support of placement of students and graduates. Investigators – Lareef Zubair and Zeenas Yahiya, 2010-2015.
- ***ASIRI***: *Remote Sensing of Atmospheric Waves and Instabilities* (RAWI). This examines the ocean-atmosphere linkages over the tropical Indian Ocean region. Project conducted by the Office of Naval Research, administered by University of Notre Dame (L. Zubair, Co-PI 2014-2017).
- ***PEER Cycle 3***: “*Developing Monitoring Tools for Managing Drought Risk and addressing the Riddle of Increased Drought Tendency amidst the Wetter Climate Change Projections for Sri Lanka and Maldives*” from the US National Academy of Sciences (PI - Z. Yahiya, L. Zubair, Mizna Mohamed, 2014 -2017).
- ***PEER Cycle 4***: “*Can drought, flood and landslide hazard be skillfully assessed at fine spatial resolution from combining constrained streams of observed, remotely sensed and model predicted data in Sri Lanka and Maldives?*” from the US National Academy of Sciences (PI – P. Wickramagamage, L. Zubair, Zahid, 2015 – 2018).

***Grant Reporting***

- Quarterly Reports and Annual Technical Reports were submitted to Partnerships for Enhanced Engagement in Research Science, on “*Intra-seasonal climate predictions for Sri Lanka and Maldives for water resources management*”.
- Quarterly Reports were submitted to Partnerships for Enhanced Engagement in Research Science, on “*Developing Monitoring Tools for Managing Drought Risk and addressing the Riddle of Increased Drought Tendency amidst the Wetter Climate Change Projections for Sri Lanka and Maldives*”.
- Draft Manuscripts were submitted to the Masters in Sustainable Development Practice program at the University of Peradeniya, on “*Rice and Climate in Sri Lanka: Impacts, Adaptation and Food Security*” and “*Climate and Water Resources Management: with Case Studies in Sri Lanka*”.

## **Grants Completed**

- **CCAFS:** “Development, evaluation and application of a toolkit for regional crop yield forecasting and climate change impact assessment for Sri Lanka”. Investigator: Lareef Zubair. Contribution to the Department of Agriculture, (NRM) CCAFS (Climate Change, Agriculture and Food Security) project. (2012 – 2015).
- **PEER Cycle 1:** “Intra-seasonal climate predictions for Sri Lanka and Maldives for water resources management” from the US National Academy of Sciences. Investigator – Lareef Zubair (2012 -2015).

## **Proposals and concept notes**

- April 2015 - pre-proposal to the **Partnerships for Enhanced Engagement in Research (PEER)** Program entitled, “Can drought, flood and landslide hazard be skillfully assessed at fine spatial resolution from combining constrained streams of observed, remotely sensed and model predicted data in Sri Lanka and Maldives?”. Principal investigator: Dr. Piyasena Wickramagamage.
- April 2015 - pre-proposal to the **Partnerships for Enhanced Engagement in Research (PEER) Program** entitled, “Predicting Dengue Risk from Environmental, Entomological, and Societal Information to aid public health management in Sri Lanka and Maldives”. Principal investigator: Dr. P.H.D. Kusumawathie.
- August 2015 – Proposal on “Can drought, and flood hazard be skillfully assessed at fine spatial resolution from combining constrained streams of observed, remotely sensed and model predicted data in Sri Lanka and Maldives?”. Principal investigator: Dr. Piyasena Wickramagamage, to the **US National Academy of Sciences**.

Our pre-proposals submitted to the PEER program on Dengue and Water Scarcity were accepted. The full proposal to investigate climate change and water resources in Sri Lanka and Maldives under climate change was granted under cycle 4 of the Partnerships for Enhanced Engagement in Research (PEER) program of the US National Academy of Sciences. The project is entitled as, “*Can drought and flood hazard be skillfully assessed at fine spatial resolution from combining constrained streams of observed, remotely sensed and model predicted data in Sri Lanka and Maldives?*”. We supported a concept note that was submitted to the APN program by our collaborator from Frontier Research System in Japan, but it was not encouraged.

## **Training & Staff**

Internship opportunities were provided to students from the Faculty of Science at University of Peradeniya, University of Kelaniya, National Institute of Business Management (NIBM) and the Sri Lanka Institute of Information Technology (SLIIT).

- Ms. Indika Sandamali joined FECT from the Computer Science Bachelors program at the NIBM and National School of Business Management for her training in March 2015.
- Mr. Dinith Walgama of the Information Technology program at SLIIT joined FECT as an intern writer in May 2015.
- Ms. Chamidu Gunaratne joined as an intern in July 2015.
- Ms. Udara Rathnayake from the Statistics program at the Faculty of Science, University of Peradeniya joined FECT for her Industrial training assignment in September 2015.

We had the following join FECT in a full time capacity.

- Mr. Akram Kamiss joined FECT as a trainee programmer/data analyst in March 2015.
- Ms. Naomi Fernando joined FECT as a trainee writer in March 2015.
- Ms. N. Shobana joined FECT as a trainee administrative assistant in July 2015.
- Dr. Madura Dharmadasa joined FECT as a writer in September 2015.
- Ms. Aishath Afaaf joined FECT as a writer in September 2015.

## **Operational Services**

- **Climate Services for Sri Lanka:** We continued to provide Climate Services for the Mahaweli Authority and Maldives. These advisory reports are available at: <http://fectsl.blogspot.com/>; and the monthly Climate Report for Maldives at: <http://www.tropicalclimate.org/maldives>. Weekly expert input for Hydro-meteorological Assessment for Mahaweli Authority in Sri Lanka, made available via <http://fectsl.blogspot.com/>; <http://www.climate.lk/> and <http://fectsl.wordpress.com/>
  - Continued to support the 30-day predictions for Sri Lankan regions.
  - Continued various rainfall estimation tools.
- **Climate Services for Maldives:** Collaboration with the Maldivian Meteorological Services
  - Monthly Hydro-meteorological Advisory services to Maldives.
  - Made Available via <http://fectmv.blogspot.com>
- **Climate Services for the Comoros:** <http://www.tropicalclimate.org/comoros/>

## **Dissemination**

### **Posters**

- Posters on Climate and Water Security were prepared for the Workshop in Maldives National University
  - Monthly Climate Advisories for the Maldives.
  - Availability of Fresh water in Greater Male and Mitigation options.
  - Estimation of Water Scarcity in Maldives.
  - Annual, Seasonal, Regional and Inter-annual Dengue in Maldives.
  - Relationship of Dengue Incidence with Climate in Maldives.
  - Seasonality of Climate in Maldives.
  - Satellite based Rainfall Monitoring for Maldives.
  - El Nino and La Nina influences on the Climate of the Maldives.
  - Intra-Seasonal Climate Predictions for Sri Lanka and Maldives.
- These Posters were refined and compiled into a book.

### **Brochures/Flyers**

- A two page Brochure on Projects in Maldives was prepared.
- Flyers were updated on:
  - Intra-Seasonal Climate Predictions for Sri Lanka and Maldives for Water Resources Management.
  - Experimental Hydro-Meteorological Advisories for Maldives.

## **Websites, Blogs, Social Media and Mailing Lists for Sri Lanka**

**Websites:** We updated our website: <http://www.climate.lk> , while [www.tropicalclimate.org](http://www.tropicalclimate.org) remains a work in progress. [www.recoverlanka.net](http://www.recoverlanka.net) and [www.geolanka.net](http://www.geolanka.net) are not being maintained any longer and their contents shall be recovered in the future.

### **Project Websites:**

MDP: <https://mdpsl.wordpress.com/> (5 posts, 249 views, 174 visitors)

AgMIP project: <https://agmipsl.wordpress.com/> (38 posts, 4059 views, 1956 visitors)

PEER: <https://peersl.wordpress.com/> (43 posts, 4276 views, 2315 visitors)

ASIRI RAWI project: [http://www.tropicalclimate.org/Asiri\\_Rawi/](http://www.tropicalclimate.org/Asiri_Rawi/)

### **Blogs:**

The FECT-SL, AgMIP and PEER blogs were updated occasionally with general, water related and agriculture related content.

We have websites on Sri Lankan climate at: <http://srilankaclimate.wordpress.com> and <http://fectlk.blogspot.com> (10 000+ views), which were updated regularly.

Two of our blogs <http://fectsl.blogspot.com> and <http://slect.net/> are archived at [www.kottu.org](http://www.kottu.org), which is a blog aggregator.

Blog: <http://fectsl.wordpress.com/> (14 posts, 5434 views, 839 visitors)

**Twitter:**

<https://twitter.com/fectlk> (130 tweets, 31 followers)

<https://twitter.com/fectwms> (42 tweets, 8 followers)

<http://twitter.com/sselect> (95 tweets, 84 followers)

**Facebook:**

<https://www.facebook.com/FECTSL> (54 posts and 22 likes)

**Mailing Lists:**

**Subscription:** <http://us9.campaign-archive1.com/?u=ff57d77d5795e3c682918d795&id=79bfc555f>

Alternative short link: <http://eepurl.com/bPlixn> (58 subscribers, 50+ campaigns)

Sri Lanka Elections Analytics: [http://sselect.us11.list-](http://sselect.us11.list-manage2.com/subscribe?u=ff5957d61c140b65bbb39c85e&id=e005cb8173)

[manage2.com/subscribe?u=ff5957d61c140b65bbb39c85e&id=e005cb8173](http://sselect.us11.list-manage2.com/subscribe?u=ff5957d61c140b65bbb39c85e&id=e005cb8173) (9 subscribers)

**Websites, Social Media and Mailing Lists for Maldives****Websites:**

<http://www.tropicalclimate.org/maldives>

<https://maldivesclimate.wordpress.com/> (1 post, 22 views, 9 visitors)

**Blogs:**

<http://fectsl.blogspot.com> and [fectmv.blogspot.com](http://fectmv.blogspot.com) are being regularly updated.

**Twitter:**

<https://twitter.com/fectmv> (65 posts and 53 followers)

**Facebook:**

<http://facebook.com/fectmv> (344 posts and 216 likes)

**Mailing List:**

**Subscription:** <http://us9.campaign-archive1.com/?u=53b9103c4a780015ae4851ce0&id=0ccb8998ce>

Alternative short link: <http://eepurl.com/bPkohP> (89 subscribers, 32 campaigns)

**Websites, Social Media and Mailing Lists for Comoros****Websites:**

<http://www.tropicalclimate.org/comoros>

**Blog:**

<http://fectcomoros.blogspot.com>

**Twitter:**

<https://twitter.com/fectkm> (0 tweet, 1 follower)

**Weather instruments:**

We operated two automated weather stations and made data available online. Weather data at our offices is taken every half an hour and uploaded automatically to the Internet for public access. For Akurana, one year of continuous records are available.

For Digana: [http://tropicalclimate.org/digana\\_weather/](http://tropicalclimate.org/digana_weather/) Twitter: <https://twitter.com/diganaweather>

For Akurana: [http://tropicalclimate.org/akurana\\_weather/](http://tropicalclimate.org/akurana_weather/)

**Collaboration:**

We had productive collaborations with personnel attached to the Mahaweli Authority of Sri Lanka (MASL), University of Peradeniya (UOP), Open University of Sri Lanka (OUSL), Anti Malaria Campaign, and the Kotmale International Training Institute. We were supported by personnel of the Department of Meteorology and the Department of Irrigation, Disaster Management Centre.

In Maldives, we had productive collaborations with Maldives National University, Male' Water and Sewerage Company of Maldives, Maldives Meteorological Services, Health Protection Agency of Maldives, Renewable Energy Maldives, Land and Marine Environmental Resource Group Pvt Ltd., Maldives.

Internationally, we collaborated with NASA Goddard Space Flight Centre, Columbia University, Florida Agricultural and Mechanical University, Indiana University-Purdue University at Indianapolis (IUPUI), International Research Institute for Climate and Society (IRI), State University of New York (Albany), New York University, Andalas University in Sumatra, Indonesia, and the Institute of Water Modelling in Dhaka, at Bangladesh University of Notre Dame continued. In March 2015, FECT was listed in the “Directory of Research Centers in Sri Lanka”, in the American Institute for Sri Lankan Studies (<http://www.aisls.org/resources/directory-of-research-centers-in-sri-lanka/>).

### ***Discussions / Meetings***

- 12<sup>th</sup> - 14<sup>th</sup> of September 2015 - Maldives visit of Lareef Zubair, Prabodha Agalawatte, Janan Viswanathan and Zeenas Yahiya. Meeting with Dr. Mizna Mohamed, Dr. Shazla Mohamed and Ms. Majeeda Mohamed of Maldivian National University, Dr. Zahid of Maldives Meteorological Services, Mr. Mohamed Rasheed of Male’ Water and Sewerage Company, Mr. Nishan Ahmed of Health Protection Agency Maldives and Mr. Aslam of LaMER groups.
- September 2015 - Lareef Zubair had discussions with Ms. Nihani Riza of USAID and Ms. Hudha Ahmed of Renewable Energy Maldives in Male, Maldives.
- September 2015 – Lareef Zubair had discussions with a delegation of 7 from Zanzibar who visited Hairu Group in Kandy regards collaboration. The delegation included academics and the Secretary to the Ministry of Fisheries and all have expressed interest in hosting FECT work in the future.

### ***Administration and IT:***

Financial management at Peoples Bank, Hatton National Bank and Commercial Bank have been ordinary. Our auditors, Anzari and Co. have once again certified our accounts to be up to standards and our Annual Report has been submitted to the Registrar of Companies by Ralapanawe Associates, Colombo. Our libraries have been catalogued to a large extent. Our paper holdings have been organized into a filing system to a large extent. These catalogues and other information are being made available via a staff internal web site. Computer systems were maintained and upgraded to keep up with the additional staff. We have set up better communication systems for remote interaction between our offices. Our application to register FECT in Maldives is pending at the Ministry of Home Affairs. FECT-Afrique is registered in the Comoros starting December 2014.

### ***Acknowledgements:***

We are thankful to Mr.S.R.K. Aruppola, Director Headworks (MASL), Eng. Thilaka Samaratunga, Director, Water Management Secretariat and their staff for sustained support at the Mahaweli Authority in many ways. Our affiliate scientists, Neil Devadasan, S. Mahanama, Vidhura Ralapanawe, Ajith Gunaratne, Nalin Wickramanayake and Herath Manthirithillake continued to support us in many ways. We acknowledge the support of Dr. Kanthi Perera, Dr. Sachith Abeysundara, Prof. W.B. Daundesekera (Faculty of Science), Mr. Dammika Bandara (MASL), Prof. Rudi Febriamansyah (Andalas University, Indonesia), Jeanette Normand, Nihani Riza and Paul Richardson (USAID). We thank Mr. Ranjith Senevirathne and the staff of the HAO&M Unit of the MASL for their support.

In Maldives, we thank Ms. Hudha Ahmed (Renewable Energy Maldives), Dr. Zahid (Met Service), Majeeda Mohamed (Ministry of Environment), Nishan Ahmed (Ministry of Health), Dr. Mizna Mohamed and Dr. Shazla Mohamed (Maldives National University). In Comoros, we are grateful to Messers Rukshan Malewena, Chamsoudine, and Goulam for their support.

We thank James Hansen, Amor Ines of the IRI for their support with the CCAFS and AgMIP programs. We thank Michael Bell, Benno Blumenthal and Remi Cousins of the IRI for their support in numerous ways. At Columbia University, we thank Profs. Adam Sobel, Upmanu Lall, Dr. Bradfield Lyon and Mr. Haibo Liu for supporting us in various ways including for the PEER grants. We thank Shaky Sherpas for his support with our various work. We thank Sonali McDermid of NYU. Dalal Najib and Kelly Robbins and Al Mattei of National Academy of Sciences, who has been supporting us with the PEER project. We are grateful for the interactions with Harindra J. Fernando of University of Notre Dame.