

CHARITABLE ACTIVITIES



www.climate.lk



Foundation for Environment, Climate & Technology

පාරිසරික දේශගුණික සහ තක්ෂණික පදනම

சூழல் காலநிலை தொழில்நுட்ப நிலையம்

Top Left: Erandika Wijekoon and Prabodha Agalawatte talking to a farmer in Kadawaramulla, Kurunegala during a survey conducted to assess the impacts of climate on agriculture (2014).

Top Right: Students from Alawathugoda National College singing the "Song for the Environment" at the Environment day programme organized by the Alawathugoda Pradheshiya Sabhawa at Al-Azhar Central College, Akurana (2013).

Middle Right: Tuan Hadgie of FECT talking to the workers of Alawathugoda garbage disposal site (2017).

Bottom Left: Ashara Nijamdeen, Chayana Gunathilake, Dinaskar Shathiyendra, Aqeel Ahamed and Tharani Kailaivasan after receiving ICTA's E-Swabhimani Digital Social Impact Award (2019).

Bottom Right: Lighting the oil lamp at the function held at the Alawathugoda National School for the Environment day by the Alawathugoda Pradeshiya Sabhawa (2017)



ICTA's e-Swabhimani 2019 Digital Social Impact Award for the FECT collaborative Climate Change and Disaster Hazard Portal (www.disaster.lk) - October 2019

Citation: Zubair, L., Kailaivasan, T., Gunathilake, C., Abeywardane, A., Hadgie, T., Nijamdeen, A., Frank, J., Shakira, F. Charitable Activities of the Foundation for Environment, Climate and Technology, FECT Technical Report No. 2019-6, 4th Edition, November 2019.

SUMMARY

Overview: We summarize the charitable work done by Foundation for Environment, Climate and Technology, its staff and collaborators since 2004. This work is done with financial donations or grants from individuals and organizations that fund scientific and development work. What makes our activities consequential far beyond what our budgets imply is the voluntary sharing of expertise, skills and energy of the dedicated efforts of volunteers, visitors, scientists and administrators and the unstinted support of a local and international network of experts and supporters. We have sponsored and conducted educational programs at school and University level and sponsored 60 internships, studentships and training programs. For example, at the request of the Mahaweli Authority officials, we have been providing a weekly bulletin of monitored and prediction climate to aid national water management for the last decade. We provided our outputs freely and have never charged for services.

Charitable Contributions: Charitable work is defined in Sri Lanka under the guidelines provided by the Inland Revenue Acts in five categories. As demonstrated by our record of publications, projects, peer reviewed donations/grants, appreciation by government officials, researchers, and the community, we have contributed to 1. Promotion of Knowledge and Education, 2. Environmental Protection, 3. Relief of Poverty and 4. Other Activities of benefit to Mankind. These contributions are summarized below.

1. Promotion of Knowledge and Education:

All of our research work, building of research capacity, and promotion of research activities falls squarely under **Promotion of Knowledge**. We have undertaken research programs in the sectors of Water Resources, Health, Agriculture, Disasters, Energy, Coastal Conservation and Policy. This work is underpinned by our research on Climate, Hydrology and Environment. We also work to advance environmental monitoring – for example, we sustained a national campaign to protect the Colombo Meteorological Observatory grounds from encroachment. Our effectiveness and quality are evidenced by over 50 research peer-reviewed journal papers and proceedings and sustained garnering of competitive peer-reviewed grants from organizations such as the National Academy of Sciences.

Under **Advancement of Education** we can include efforts directed at primary school to training of experts. It includes our promotion of **STEM (Science, Technology, Engineering and Mathematics) education** at middle and senior level schools and contributions to school environmental programs, **University lecturing** at Masters and Undergraduate level and our collaborative initiation and establishment of a trans-disciplinary **Masters in (Sustainable) Development Practice** at the University of Peradeniya. This masters program has now graduated 7 cohorts. In addition, we have supported environment day and other activities in schools in our localities on multiple occasions addressing topics such as dengue risk, solid waste management, protecting wells and rivers, disaster and environmental risks. We have **supported the education of our staff** (45 Bachelors students and 11 Masters students) through supporting internships, providing research guidance, providing resources for research and even financial assistance. We have also supported the **admission of our staff and collaborators to coveted post-graduate programs** such as at Columbia University, Yale University, Ohio University, University of Waterloo, Australian National University, University of Melbourne and Universities in Korea.

2. Environmental Protection: While all our work is to identify threats and identify mitigation and adaptation steps to this end, as examples, we provide three examples below:

Example 2.a: with the support of the Environmental and Forest Conservation Division of the Mahaweli Authority and the Department of Wildlife Conservation, we identified a climate sensitivity to the likelihood of **Human Elephant Conflict in Sri Lanka**. This work enabled justification for funding and the better targeting of catchment enrichment programs so that elephants obtain water and forage in drought periods. A report and conference papers have been published on this and presentations have been provided.

Example 2.b: We are addressing **Flooding and Pollution in Pinga Oya**, and supporting the work of the Akurana Pradeshiya Sabhawa and Akurana Divisional Secretariat to prevent siltation,

flooding and encroachment by identifying causes, mitigatory steps and monitoring of weather.

Example 2.c: Our work on *monitoring and managing Air Pollution and Health Impacts* in Western Sri Lanka helps with protection of people, ecosystems, fauna and our hydrological cycle even in the rest of Sri Lanka. Our work on impacts of air pollution impacts from coal power plant has included 5 feature articles, support for journalists, presentations to experts and support for the Environment Committee of the Public Utilities Committee of Sri Lanka and submissions in an expert panel to the Supreme Court.

3. **Relief of Poverty:** Our direct assistance provided during disasters such as the Tsunami, Flooding, Riots and Mob Violences are appreciated by those affected as the material contributions leveraging our networks are matched by organizational, knowledge based and documentation support for the afflicted. Disasters and Diseases can tip the impacted to poverty levels and stymie the efforts of the poor. Our work in aid of *dengue and malaria risk* reduction with the public health communities and with local officials, communities for *flood, drought and landslide* disaster risk management helps the vulnerable in this sense.
4. **Other activities of benefit** to mankind in Sri Lanka or Outside. Some of our other activities which are arguably at an existential level of human interest include a) Providing Climate Services for Risk Management, b) Understanding Climate Change for Adaptation, c) Disaster Risk Management, d) Protecting the Coasts and Seas around us, e) Technical Assistance for charitable activities of small charitable organizations. As examples for each of the categories:
 - a) **Climate Services for Risk Management:** We provide a weekly climate bulletin for national water management in Sri Lanka and a monthly bulletin in the Maldives for environmental protection. For Comoros and Zanzibar, we have a portal for identifying risks related to sea bound fisher folks. In Sri Lanka, this information guides, choices on releases of water from reservoirs and across basins. We helped improve the Yield Prediction Programs of the Coconut Research Institute and that helps with policy decisions on subsidies, imports, and pricing.
 - b) **Quantifying Climate Change for Adaptation:** We have quantified the risks of climate change for rice farming and documented the inputs of farmers in Ampara, Kurunegala, Matara. We have quantified the likelihood of saltwater intrusion into lagoons due to changing patterns of stream flow and breaking of seasonal coastal barriers due to climate change across Sri Lanka.
 - c) **Disaster Risk Management:** Having initiated this work early, we supported UN and national organizations. As the fruition of this work, we have set up a portal to appraise the public of air pollution, heat stress, drought, climate change risk monitoring and mitigatory steps.
 - d) **Protection of Coasts and Seas:** We sustained a campaign to stop the construction of a channel in-between Sri Lanka and India called Sethusamuduram through news features, lectures and collaboration with groups across the Palk Straits as this shall lead to massive environmental problems. Our work on seasonally-open coastal inlets helps guide lagoon management.
 - e) **Aiding Small Community Organizations:** We have helped develop a website for the Community Service Movement in Akurana and a web portal for the Akurana Women's Welfare Association. In addition, we assisted a regional newspaper obtain a grant to Upgrade Tamil Journalism in Central Sri Lanka. We supported communication among a network of scientists called the Sri Lanka Meteorology, Hydrology and Oceanography Network.

Partnerships: We have *aided the work of government organizations* and for the public welfare. These include the Mahaweli Authority of Sri Lanka, Department of Meteorology, Department of Agriculture, Anti Malaria Campaign, National Dengue Control Unit, Tea Research Institute, Coconut Research Institute, Sugarcane Research Institute, Public Utility Commission of Sri Lanka, Local Government Authorities, and the Ministry of Water Resources, Mahaweli and Irrigation, Foreign Affairs, Disaster Management, and Science and Technology. We have collaborated with *national universities* (Peradeniya, Moratuwa, Ruhuna, Sabaragamuwa, Eastern, South-Eastern, Rajarata, Jaffna, and Open University) and two dozen *overseas Universities* in India, Pakistan, Maldives, Japan, Zanzibar, Comoros, United Kingdom, Italy and USA. We have collaborated with three dozen *community-based organizations*, *private sector organizations* and similar *charitable organizations*.

TABLE OF CONTENTS

SUMMARY.....	iii
EXTENDED SUMMARY.....	1
PROMOTION OF KNOWLEDGE	1
Awareness Programs on Dengue Risk (2012-2017)	2
National Malaria Workshop (September 2007)	2
Symposium on Pinga Oya (2013).....	2
Dendrochronology (December 2004)	3
PROMOTION OF EDUCATION.....	3
Environment Day for Schools in The Pinga Oya Catchment (2013).....	4
Research and Awareness Programs for the Pinga Oya (2013)	4
Environment Day for Schools – Alawathugoda National School (2017)	4
Awareness Program on Solid Waste Management (2017).....	5
Awareness Program for School Students on Coexistence and Harmony in Society (2018).....	5
Environment Day Program - Akurana Balika (2019).....	5
Lectures and Courses.....	6
Masters in (Sustainable) Development Practice - University of Peradeniya (2011 to Present).....	6
ENVIRONMENT PROTECTION AND ECO FRIENDLY ACTIVITIES.....	19
Work with Mahaweli Authority of Sri Lanka.....	19
Work with Public Utilities Commission of Sri Lanka.....	19
RELIEF OF POVERTY.....	25
Tsunami Relief (2004).....	25
Emergency Water Treatment Systems for Tsunami Affected Area (2005).....	25
Relief in Times of Man-Made Disasters.....	26
Support for Health Services.....	26
TOPICS OF INTEREST OR USE TO THE MANKIND.....	27
Climate Services and Climate Risk Management.....	27
Climate Advisories for Water Management Secretariat	27
Climate Based Coconut Yield Prediction.....	27
Understanding Climate Change and Adapting to it.....	27
Mainstreaming Climate Information.....	27
Advancing Capacity for Climate Research.....	28
Preserving the Colombo Meteorological Observatory.....	28
Sri Lanka Meteorology, Oceanography and Hydrology Network.....	28
Protecting the Coasts and Seas Around Us.....	28
Sethusamudram.....	28
Understanding the Impacts of Warming Seas on Coral Reefs.....	29
Assessing Impacts of Changing Streamflow on Seasonally and Intermittently Open Coastal Inlets.....	29
Promoting Understanding of Climate on Oceans and Information.....	29
Assistance and Contributions to Other Charitable Organizations.....	29
Assistance to Akurana Women’s Welfare Association.....	29
Assistance to Community Services Movement.....	30
Assistance to News View Regional Newspaper.....	30
CONTRIBUTIONS TO OTHER INDIAN OCEAN ISLANDS	35
Services In Maldives.....	35
Climate Advisories.....	35
Workshop on Climate and Water Security.....	35
Workshops for School Students of Southern Maldives.....	36
Climate and Environmental Observing Systems.....	36
Services for Comoros.....	37
Services for Zanzibar.....	37
Services for Chagos.....	37
MASS MEDIA FEATURES AND CITATIONS.....	44
PECT INSTITUTIONAL PROFILE.....	47
ACKNOWLEDGEMENTS	54

FLYERS

- Symposium on Environmental and Disaster Related Issues in Pinga Oya organized by University of Peradeniya and FECT.
- Improving Solid Waste Management – Guidance for Middle School - prepared by FECT and distributed to students.
- Informational Flyer on FECT support for Masters in (Sustainable) Development Practice at the University of Peradeniya
- Informational Flyer of FECT work on Air Quality Monitoring.
- Informational flyer on FECT's Weekly Climate Advisory for National Water Management
- Web portal of the Akurana Women's Welfare Organization
- FECT Summary flyer for Sri Lanka – English
- FECT Summary flyer for Sri Lanka – Sinhala
- FECT Summary flyer for Sri Lanka – Tamil
- FECT Summary flyer for Maldives
- FECT Summary flyer for Comoros
- FECT Summary flyer for Zanzibar

LETTERS FROM PARTNERS AND COLLABORATORS

PROMOTION OF KNOWLEDGE AND EDUCATION

Agriculture

- Dr. A.P.Keerthipala, Assistant Director (present Director), *Sugarcane Research Institute*, Uda Walawe — 2012
- Dr. W.M.W.Weerakoon, Agronomist (present Director General of Agriculture) *Rice Research and Development Institute, Department of Agriculture*, Ibbagamuwa, Kurunegala — 2012
- Dr. B. V. R. Punyawardena, Climatologist (Present Director), *Natural Resource of Management Centre, Department of Agriculture*, Peradeniya — 2012

Public Health

- Dr. Shanthi Samarasinghe, *Provincial Director of Health Services*, Central Province — 2017
- Dr. Hasitha Thissera, *Director, National Dengue Control Unit*, Colombo — 2015

Water Management

- Eng. Thilaka Samarathunga, Director of *Water Management Secretariat, Mahaweli Authority* of Sri Lanka, Colombo — 2011
- Mr. Madhawa Warnakulasooriya, Divisional Secretary, Akurana — 2017

ENVIRONMENTAL PROTECTION AND ECO-FRIENDLY ACTIVITIES

- Mr. Damitha Kumarasinghe, Director General, *Public Utilities Commission of Sri Lanka* — 2019
- Mr. T. S. Rajapaksha, Secretary, *Pradeshiya Sabha, Akurana* — 2013
- Mr. S.M. Mubarack, Joint Secretary, *Puttalam Environment Watch*, Puttalam – 2018

OTHER TOPICS OF INTEREST

- Ms. Sithara Khan, Acting Director General, *Ministry of Foreign Affairs* — 2017

ILLUSTRATIONS

- ICTA's *e-Swabhimani 2019 Digital Social Impact Award* for the FECT collaborative Climate Change and Disaster Hazard Portal (www.disaster.lk) - October 2019
- *International Malaria workshop* organized by FECT, the International Research Institute for Climate and Society, the International Water Management Institute (IWMI) and the Anti-Malaria Campaign at IWMI — 2007
- *National Malaria workshop* organized by FECT held at Post-Graduate Institute of Sciences, Peradeniya organized by FECT, the Anti-Malaria Campaign and the International Research Institute for Climate and Society -2007
- Dr. Lalitha Dissanayake, Senior Lecturer, Geography of the University of Peradeniya presenting at the *Symposium on Pinga-Oya* organized by FECT and the Department of Geography at the University of Peradeniya in February 19, 2013. Members of Akurana Womens Welfare Association registering.
- *Workshop on Dendrochronology for Paleoclimate studies* organized by FECT and the Department of Geography with resources persons Dr. Brendan Buckley and Dr. Orawan Buckley at the Senate Hall, University of Peradeniya, 2004.
- Right: Dr. Lareef Zubair lighting the oil lamp at the *Environment Day event* organized by the Akurana Pradeshia Sabhawa and FECT at Azhar National College, Akurana, Left: Students from Alawatugoda National School rendition of the “Song for the Environment”, 2013.
- The *Pinga Oya Symposium* organized by FECT and the Department of Geography, University of Peradeniya. Left: Dr. P. H. D. Kusumawathie (AMC) Registering for the Symposium. Right: Dr. L. Zubair (FECT) presenting at the Symposium, 2013.
- *Environment Day Program at the Alawatugoda National School* organized by the Akurana Pradeshia Sabhawa with FECT. Ashara Nijamdeen and Asansa Abeywardena (FECT) presenting at the environment day program and lighting the oil lamp at the inauguration. 2018.
- *Program on Co-Existence and Harmony* organized by FECT and partners at Mowbray College, Kandy May 2018. Left: Rt. Reverend Keethisiri Fernando, *Bishop of Kurunegala* addressing the students. Right: Ms. Dilanthi Manuel, *Principal of Mowbray College* and Prof. Jude Fernando, *Professor of Sociology at Clark University*.
- *Outreach on FECT research* by Dr. L. Zubair explaining research findings to staff of Mahaweli Authority of Sri Lanka on the occasion of the Sinhala and Tamil New Year commemoration. 2012.
- *Tsunami Relief Efforts by FECT staff: The* Principal Scientist with the Coordinator of the Relief Camp during the Tsunami, Prof. Raveendran, Vice Chancellor of the Eastern University in the week after the Tsunami., Installed Water Treatment Plant at the Eastern University, Chenakaldy, Batticaloa.2004.
- Meeting of FECT Scientists and Collaborators at the Director General's office of the *Sri Lanka Department of Meteorology* – 2003
- FECT provided *Digital Support for the Akurana Womens Welfare Association* (AWWA) A meeting between FECT and AWWA members, Documentation of proper garbage disposal system by AWWA members. 2016-17
- *Workshop on climate and water security* organized by FECT and the Maldives National University. Participants at the workshop held in Maldives and L. Zubair presenting. 2016.
- Presentations on *Advancing STEM in Maldives* (Science, Technology, Engineering and Mathematics) in September 2019 at the Huvadhoo School.

- L. Zubair participated in the *School Science Fair organized by the Gaafu Dhaalu Atoll Education Centre* in Maldives in September 2019. The Certificate of Appreciation is included.
- A *Train the Trainers Workshop for Fisheries* was organized by the Comoros Ministry of Fisheries and the Hairu Group. L. Zubair contributed to this workshop on Climate related Disasters and Information Services for Multi-Day Fishing Vessels in Moroni, Comoros. 2017
- L. Zubair with local partners on a visit to one of the largest farms in Grand Comoros Island in 2017. This followed collaboration with the Department of Agriculture and the University of Comoros on *Climate Impacts on Comorian Agriculture*.

EXTENDED SUMMARY

In Sri Lanka, charitable work is defined under the guidelines provided by the Inland Revenue Guidelines as falling in any one of 5 categories.

- Promotion of Knowledge and Education
 - Promotion of Knowledge
 - Promotion of Education
- Environmental Protection,
- Promotion of Religious Rites and Activities
- Relief of Poverty and
- Other activities of benefit to mankind in Sri Lanka and outside.

At FECT, our work can be classified as falling in four categories – some of our work fall in more than one category. In the Extended Summary below, we point to some instances of our work falls in each category.

PROMOTION OF KNOWLEDGE

SUMMARY

Our work under this category includes research, research support, promotion of access to knowledge and public awareness and conducting of workshops and research symposium. All of the work in this category may also fit under the category of Environmental Protection and Activities of Interest to Mankind as well.

- **Research** in climate, environmental, education, water resources, agriculture, health and environmental fields. Over 30 peer-reviewed journal articles have been published in reputed peer reviewed outlets.
- To aid Research, we have prepared a **Reference Guide** for Climate Research in Sri Lanka. We also have compiled a research guide for younger researchers in Sri Lanka.
- **Promoting public awareness** through feature articles in national newspapers, assisting journalists, workshops and presentations. Over 30 feature articles have published where FECT scientists have contributed or been cited. We support the work of journalists and other social media content providers.
- **Providing access to knowledge** through content in websites, blogs, social media and email lists. We have a substantial foot print whereby information is provided to the interested experts and public.
- **Research Symposia to support Environmental and public interest needs**

WORKSHOPS AND TRAINING PROGRAMS

We have conducted workshops and training programs for the

- | | |
|--|--|
| • Mahaweli Authority | • Coconut Research Institute |
| • Central Engineering Consultancy Bureau | • Sri Lanka Association for the Advancement of Science |
| • Department of Meteorology | • Institution of Engineers, Sri Lanka |
| • Sugarcane Research Institute | |

We have provided lectures and supported thesis research in water resources management, meteorology, oceanography, environmental science, geographic information systems and disaster management at the

- | | |
|--|--------------------------------|
| • Post-Graduate Institute of Sciences | • University of Colombo |
| • University of Moratuwa, University of Peradeniya | • Open University of Sri Lanka |

AWARENESS PROGRAMS ON DENGUE RISK (2012-2017)

An inter-sectorial meeting with Regional Health Officials, Pradeshiya Sabhawa and local government and community organizations was held by FECT. Awareness programs were conducted at the Azhar College Akurana with participation of 5 other schools.

NATIONAL MALARIA WORKSHOP (SEPTEMBER 2007)

A workshop on analysis of impacts of climate variability on malaria transmission in Sri Lanka and development of an early warning system was held at the International Water Management Institute in Colombo, which was organized by IWMI, AMC, IRI and FECT. A one-day workshop on Malaria risk management using climate information was jointly organized with the post graduate institute of Science, University of Peradeniya, Foundation for Environment, Climate and Technology, and the International Research Institute for Climate and Society, New York, USA.



Malaria workshop organized by FECT held at International Water Management Institute— 2007



Malaria workshop organized by FECT held at PGIS Peradeniya-2007

SYMPOSIUM ON PINGA OYA (2013)

Symposium on Pinga Oya was organized by the FECT and hosted at the Department of Geography in the University of Peradeniya during February 2013. The symposium was attended by scientists, researchers, teachers, undergraduates, school students, members of women's associations and journalists. The papers presented at this symposium were published as a proceedings.



Dr. Lalitha Dissanayake (UoP) presenting at the Symposium on Pinga-Oya



Members of AWWA registering at the Symposium on Pinga-Oya organized by the FECT



FECT has helped Dr. Brendan Buckley and Dr. Orawan Buckley of the Tree Ring Laboratory, Colombia University, USA visit Sri Lanka to scope out the prospects of carrying out dendrochronology studies to develop estimates of climate and hydrological variability in the past centuries in Sri Lanka. He made presentations at the Arts Faculty Seminar Room, University of Peradeniya, on Tree Ring Reconstruction of Asian Monsoon Dynamics. FECT conducted a workshop at the Post Graduate Institute of Science for 30 scientists.

Dr. Brendan Buckley presenting at the Senate Hall, University of Peradeniya, December 2004

PROMOTION OF EDUCATION

SUMMARY

We have contributed substantially to education from middle school to post-graduate programs.

- ***Contributions to Public Education*** through Features, Books, and Programs and School Level Education through enabling students to participate in programs and providing curriculum support and support for teachers and student projects.
- ***Contribution to Undergraduate Education*** in nearly all National Universities and other National Tertiary Educational Institutes we hosted students for Internships, Contributions of Lectures and to Postgraduate level education through provision of lectures and internships for many Universities and Tertiary Educational Institutions.
- ***Support for Higher Education*** of our staff by providing opportunities to pursue Masters Degrees and Doctorates.
- ***Setting up Masters in (Sustainable) Development Practice (MDP)*** - We played an essential role in starting an inter-disciplinary Masters in (Sustainable) Development Practice at the University of Peradeniya. This program has now trained seven cohorts of students from across Sri Lanka with a few from overseas.

Our work on the promotion of Education too fits under the categories of Environment Protection and Activities that matter to Mankind. Some of the activities and workshops that were organized and sponsored by FECT are described below.

EDUCATIONAL PROGRAMS

ENVIRONMENT DAY FOR SCHOOLS IN THE PINGA OYA CATCHMENT (2013)

An environment day program was organized for the school children in and around Akurana on 12th June 2013 at Azhar Central College, Akurana. The program was conducted with the assistance of the Akurana Pradeshiya Sabahawa. Children from seven schools in the area, employees from the government and private sector and community groups participated and contributed to this program. The aim of this event is to raise an awareness to take positive environmental actions to protect nature and the planet earth. This was an enriching event which included environmental speeches by the participated organizations, student's programs and exhibition in reference to the environment day.



*Right: Dr. Lareef Zubair lighting the traditional oil lamp at the inauguration of the event
Left: Students singing the "Song for the Environment"*

RESEARCH AND AWARENESS PROGRAMS ON THE PINGA OYA (2013)

Symposium on Pinga-Oya was organized by the Foundation for Environment, Climate & Technology and hosted at the Department of Geography, in the University of Peradeniya on February 19, 2013. The symposium was attended by scientists, researchers, teachers, undergraduates, school students, members of women's associations, and journalists. The papers presented at this symposium are published as a proceeding. Satellite based weather information dissemination for Akurana were developed in 2014 and operated two automated weather stations in Akurana and made data available online.



Dr. P. H. D. Kusumawathie (AMC) Registering for the Symposium



Dr. L. Zubair (FECT) presenting at the Symposium

ENVIRONMENT DAY FOR SCHOOLS – ALAWATUGODA NATIONAL SCHOOL (2017)

An environment day program in Alawatugoda National College was conducted by the Akurana Pradeshiya Sabhawa (Local Government) on June 5, 2017. Children from grade 6, 7 and 8 participated to this program. The aim of this event is to raise an awareness about Solid Waste Management to take positive environmental actions. This was included with the enriching events in reference to the environment day.



Ashara Nijamdeen (FECT) presenting at the environment day program



Ashara Nijamdeen (FECT) lighting the traditional oil lamp at the inauguration



Students from grade 6 to 8 engaging with the presentation

AWARENESS PROGRAM ON SOLID WASTE MANAGEMENT (2017)

Awareness program on Solid Waste Management and Dengue Risk was conducted at the Rambuke-Ela Vidyalaya in Alawatugoda on 27 October 2017.

AWARENESS PROGRAM FOR STUDENTS ON COEXISTENCE AND HARMONY IN SOCIETY (2018)

FECT and Mowbray College, Kandy organized an assembly for the students on March 27 2018. The aim of the event was to understand the impacts of mob violence on school children and see how it can be mitigated and abated through education. The keynotes were delivered by Rt. Reverend Keethisiri Fernando, the Bishop of Kurunegala and by Prof Jude Fernando, from Clark University, USA. There was a distinguished panel where the issues in question were addressed.



Rt. Reverend Keethisiri Fernando, Bishop of Kurunegala talking to the students at the assembly



Ms. Dilanthi Manuel, Principal of Mowbray College and Prof. Jude Fernando talking to the students at the assembly

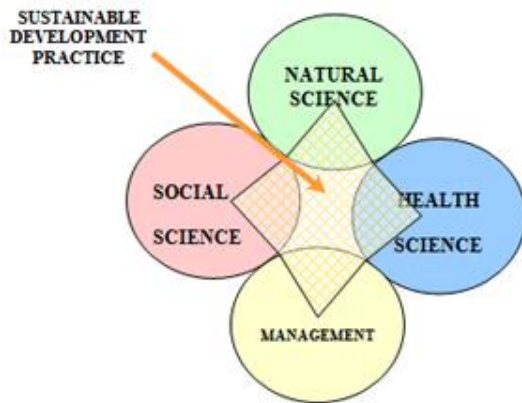
ENVIRONMENT DAY PROGRAM - AKURANA BALIKA (2019)

The Akurana Pradeshiya Sabhawa with the support of FECT organized a program on June 12, 2019 at the Akurana Muslim Balika Maha Vidyalaya to mark the World Environment Day of 2019. Presentations by the staff of FECT were on various aspects of Air Pollution – the global theme for 2019. They also provided an insight to the air quality issues of Sri Lanka.

LECTURES AND COURSES

We have supported, lectured and provided resources for research to students in post-graduate courses in meteorology, oceanography, water resources and disaster management at the University of Peradeniya, University of Moratuwa,

University of Colombo, the Open University, the South-Eastern University. We have provided lectures and supported thesis research in water resources management, meteorology, oceanography, environmental science, geographic information systems and disaster management.



Sustainable development practice



Dr. L. Zubair explaining natural hazards research to some staff of Mahaweli Authority of Sri Lanka.

MASTERS IN (SUSTAINABLE) DEVELOPMENT PRACTICE - UNIVERSITY OF PERADENIYA (2011 TO PRESENT)

FECT and its partners initiated the work that led to the establishment of the Master of Development Practice (MDP) at the University of Peradeniya which was launched in September 2011. FECT staff worked to put a team together, develop the conceptual framework, and obtain a competitive grant to support this program from the MacArthur Foundation. Initially there was a two-year curriculum development and approval process. Thereafter FECT contributed for the curriculum development, teaching, research and field placements for Interns and this is reflected in the flyer. Our work is described further at www.tropicalclimate.org/mdp



ලක් පර්යේෂණ ආයතනය
கரும்பு ஆராய்ச்சி நிறுவனம்
SUGARCANE RESEARCH INSTITUTE



ලඩ්ඩුව 70 190, ශ්‍රී ලංකාව 2233285 70190, ශ්‍රී ලංකා Uda Walawe 70 190, Sri Lanka

Tel (General): 047 - 2233281, 2233285 Director 047 - 2233282 Fax : 047 - 2233233

29 February 2012

Dr. Lareef Zubair
Foundation for Environment, Climate and Technology,
c/o Mahaweli Authority of Sri Lanka,
Digana Village, Rajawella.

Dear Dr. Zubair,

SRI Contributions to the AgMIP Proposal

This letter is to confirm that the Sugarcane Research Institute of Sri Lanka supports the project proposed by yourselves entitled "Modeling the impacts of a variable and changing climate on rice and sugarcane agricultural systems in Sri Lanka for AgMIP" to the Agricultural Modeling Inter-comparison and Improvement Project.

The Sugarcane Research Institute of Sri Lanka (<http://www.sugarres.lk/>) is the national centre to conduct research on cultivation and processing of sugarcane to cater to technical and technological needs of the development of the sugar industry of Sri Lanka. Presently, the institute is under the purview of the Ministry of Minor Export Crop Promotion.

As the Deputy Director for Research and Technology Transfer, I hold the responsibility for research and development functions of the Institute. The work done at our research complexes has left us field data on crop growth since 1987. Moreover, we have some economic and survey data of the farming communities in sugarcane-growing districts of Moneragala, Badulla and Ampara. Our institute has implemented a crop model for Sugar cane and undertakes economic analyses of farming systems – all of which shall be evident from the CV's of the four investigators for this proposal; three scientists (Ms. B.D. Sandya Kumari Ariyawansa (Biometrician), Dr. A. P. Keerthipala (Agricultural Economist) and Mr A.L.C De Silva (Physiologist)) and one ex-scientist (Mr. K. Sanmuganathan (Crop Modeler)) of the Sugarcane Research Institute.

For this project proposal, our organisation shall provide support and services in the following subject to the approval of the Board of Governors:

- The participation of the above researchers and others in crop model development, envisioning future scenarios of sugarcane agricultural systems in Sri Lanka,
- Advise and support in accessing data needed for crop and economic modeling and assessment of climate change impacts the data holdings are described separately
- Contributions to project development, dissemination and work towards incorporation of results from this project in the Institutes further work.

I assure you of our highest levels of support.

Sincerely,

Dr. A.P. Keerthipala
Deputy Director (Research and Technology Transfer)
Sugarcane Research Institute, Uda Walawe, Sri Lanka

Tel: +94-47-2233233, 2233282, 2233285, Email : apkeerthipala@yahoo.com and info@sugarres.lk

29 Feb 2012

Rice Research and Development Institute
Bathalagoda, Ibbagamuwa
Sri Lanka.

Dr. Lareef Zubair
Principal Investigator
Foundation for Environment, Climate and Technology,
c/o Mahaweli Authority of Sri Lanka,
Digana Village, Rajawella.

Dear Dr. Zubair,

RRDI Contributions to the AgMIP proposal

This letter is to confirm that the Rice Research and Development Institute of the Department of Agriculture supports the project proposed by yourselves entitled "Modeling the impacts of a variable and changing climate on rice and sugarcane agricultural systems in Sri Lanka for AgMIP" to the Agricultural Modeling Inter-comparison and Improvement Project. I also shall contribute to this project proposal as a co-PI.

The Rice Research and Training Institute of the Department of Agriculture (<http://www.agriculture.gov.lk/index.php/en/institutes/129>) is designated as the National Center for the Development and Primary Dissemination of Varieties and Associated Technologies to Improve the Productivity and Profitability of Rice Farming and Quality of Rice. As the Principal Agronomist, I hold responsibility for Agronomy/Physiology research of the Department of Agriculture. The main research and administration unit of RRDI is located at Batalagoda. The long-term rice research field sites are located at Batalagoda along with several sites in other agro-ecological zones. These include a regional Research and Development Center at Bombuwela with satellite research stations at Labuduwa and Bentota and the rice research station at Ambalantota. The work done through these centers have led to some of the most important innovations and research outputs in agriculture over the last 50 years. This includes studies on the impact of changed climatic regimes on rice phenology, physiology and production which I have been leading the work at RRDI. These studies provide the high quality long-term data that is needed to support the model development work that is proposed.

For this project proposal, our organization shall provide support and services in the following:

- My participation as a co-PI in the project including crop model development, envisioning future scenarios of rice agricultural systems in Sri Lanka,
- Assist in the involvement of younger scientists at RRDI in the project.
- Advise and support in accessing data needed for crop modeling and assessment of climate change impacts – the data holdings are described separately
- Contributions to project development, dissemination, and work towards incorporation of results from this project in the Institutes further work.

I assure you of our highest levels of support.

Sincerely,


Dr. W.M.W. Weerakoon,
Senior Agronomist
Email : weerakoonwmw@gmail.com



Natural Resources Management Centre
Department of Agriculture
No 5, Sarasavi Mawatha, Peradeniya, Sri Lanka



Tel / Fax - 94-81-2388355
Email - nrmcdoa@sltnet.lk

Post - P O Box 52,
Peradeniya, Sri Lanka

29-Feb-2012

Dr. Lareef Zubair
Principal Investigator
Foundation for Environment, Climate and Technology,
c/o Mahaweli Authority of Sri Lanka,
Digana Village, Rajawella.

Dear Dr. Zubair,

NRMC Contributions to the AgMIP proposal

This letter is to confirm that the Natural Resource Management Center (NRMC) of the Department of Agriculture supports the project proposed by yourselves entitled "Modeling the impacts of a variable and changing climate on rice and sugarcane agricultural systems in Sri Lanka for AgMIP" to the Agricultural Modeling Inter-comparison and Improvement Project. I also shall contribute to this project proposal as a co-PI.

The NRMC of the Department of Agriculture (is designated as the National Center for the conducting research on natural resources of the island mainly, land and water. It is also responsible in dissemination of technologies to improve the land productivity while conserving it. As the Head of Climatology Division of NRMC, I hold overall responsibility for research and administrative functions of the Climatology Division. The NRMC and its sub-divisions are located at Peradeniya.

The work done through this center has led to some of the most important innovations and research outputs in agriculture over the last 50 years. This includes delineation of Sri Lanka into 46 agro-ecological regions based on the monthly rainfall distribution, soil type, land use and vegetation for which I acted as the team leader of the research team.

For this project proposal, our organization shall provide support and services in the following:

- My participation as a co-PI in the project including climatic data provider, crop-weather model development, envisioning future scenarios of rice and sugarcane agricultural systems in Sri Lanka,
- Assist in the Involvement of younger scientists at NRMC in the project.
- Contributions to project development, dissemination and work towards incorporation of results from this project in the centre's further work.

I assure you of our highest levels of support.

Sincerely,

Dr. B.V.R. Punyawardena



මහවැලි සංවර්ධන හා පරිසර අමාත්‍යාංශය
மகாவலி அபிவிருத்தி மற்றும் சுற்றாடல் அமைச்சு
Ministry of Mahaweli Development and Environment

"සොබාදාම පියස", අංක 416/ජ/1, රොබට් ගුනවර්ධන මාවත, බත්තරමුල්ල, ශ්‍රී ලංකාව.
 "சொபாதம் பியச", இல. 416/ජ/1, ரொபர்ட் குணவர்தன மாவத்தை, பத்தரமுல்லை, இலங்கை.
 "Sobadum Piyasa", No. 416/C/1, Robert Gunawardana Mawatha, Battaramulla, Sri Lanka.
 Gen. Tel. +94-11-2034100

ලේකම්
 செயலாளர்
 Secretary
 +94-11-2034121

ෆැක්ස්
 தொலை நகல்
 Fax
 +94-11-2879945

මගේ අංකය
 எனது இல
 My No

MME/CC/08/02/07

ඔබේ අංකය
 உமது இல
 Your No

දිනය
 திகதி
 Date

13.11.2019

Principal Scientist
 Foundation for Environment, Climate, and Technology

Invitation to the 'Project Inception Meeting' and follow up 'Stakeholder Workshop' for Strengthening National Capacities to implement the NDA Readiness Project (26 & 27 November 2019)

Sri Lanka, being a tropical island in the Indian Ocean, has frequently faced climate induced disasters that are now recurrent with multiple impacts on Sri Lanka's economic development. The country has ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1993. The Ministry of Mahaweli Development and Environment (MMDE), which has established a Climate Change Secretariat under its purview, adopts a comprehensive approach to deal with climate change challenges in the country. The MMDE is the national focal point to the UNFCCC and the National Designated Authority (NDA) to the Green Climate Fund (GCF).

In this regard, the MMDE has applied and secured GCF Readiness funds to enhance the capacities of NDA's, to undertake a strategic, evidence-based analysis of adaptation and mitigation potentials, implementation of National Adaptation Plan (NAP), Nationally Determined Contributions (NDCs), and promote climate investment opportunities in the upper watersheds that significantly influence the agriculture and urban development of the country. The World Agroforestry Center (ICRAF) has been selected as the delivery partner to implement the project over a period of one year. The main objective of this project is to support MMDE and other relevant stakeholders in the government, civil society, academia and the private sector to develop a strategy and build capacity for climate action nationwide, with a specific focus on the upper watersheds of Sri Lanka's 'Water Towers'.

Representing an organization that works on the issues related to climate change, I kindly invite you to participate at the Project Inception Meeting on **26th November 2019** from **1400 – 1600** and Follow up Stakeholder Workshop on **27th November 2019** from **0900 – 1600** in order to enhance your capacity on addressing climate change and contribute with your valuable insights and inputs in order to succeed this project in Sri Lanka. A **networking fellowship dinner** has also been arranged on **26th November** from **1830** onwards. All events will be held at the **Hilton Hotel, Colombo**.

Therefore, please be kind enough to confirm your participation in these events to Ms. Sithara Dissanayake, Project Assistant-NDA Readiness Project, Climate Change Secretariat (TP: 011 2034198 or sithuhanz@gmail.com) **on or before 22th November 2019**. In a situation that you are unable to attend, please be kind enough to nominate a suitable officer to participate on your behalf.

NB: Accommodation will be arranged on 26th November 2019 for participants travelling from outside Colombo and Colombo suburbs. I shall appreciate if you could inform us the accommodation requirement, well in advance.

Your fullest cooperation in this regard is much appreciated.

Thanking You.
 Yours Sincerely,

"ජීරෝගීනම් පරම සුප්පයි"

අධ්‍යක්ෂ
පශ්චාත්
Director } 081 - 2224336
081 - 2222341
081 - 2220206 - 8
081 - 2204755
Fax



මගේ අංකය
My No. } CPC/PDHS/P3/18/2016

ඔබේ අංකය
Your No. }

දිනය
Date } 2017. 05. 25

සෞඛ්‍ය සේවා දෙපාර්තමේන්තුව - මධ්‍යම පළාත.

සுகாதාර තිணෙරුක - මத்தිය මාකානම

Department of Health Services - Central Province.

163, සංඝරාජ මාවත, කන්දුවර.
163, සංඝරාජ මාවත, කන්දුවර.
163, Sangaraja Mawatha, Kandy.
Web: www.healthcpc.org

Dr. P.H.D. Kusumawathi
Regional Malaria Officer
Kandy

Re: Request for Access to High Resolution Long Dengue Case Data for Central Province- Research on Weather and Climate Impacts on Dengue and Development of an Early Warning System for Central province

Reference to your letter dated 19th May 2017, requesting the permission to access dengue case data at Grama Niladari Division of PHI resolution in Central Province. The Training and Research Committee of the Department of Health Services, Central Province has reviewed and recommended your research proposal. Approval is hereby granted for conducting above research in Central Province. Please also note that the approval is valid only for one year duration from today.

We would also appreciate if you could share the findings with our department for the programmatic actions to strengthen the health services in the Central Province, once you completed your research study.

Thank you,


Dr. Shanthi Samarasinghe

Provincial Director of Health Services

Central Province

Dr. (Mrs.) Shanthi Samarasinghe
Provincial Director of Health Services
Central Province

අපගේ දැක්ම : "ශ්‍රී ලංකාවේ විශිෂ්ටතම පළාත් සෞඛ්‍ය සේවා දෙපාර්තමේන්තුව බවට පත්වීම"
எங்கல்நோக்கம் : 'yq;ifapd; kpfr; rpfr; rpwe; j khfz Rfhjhu Nritfs; jpizf;fskhf cUthFjy;"
Our Vision : "To be the excellent Provincial Department of Health Service in Sri Lanka"



ජාතික ඩෙන්ගු මර්දන ඒකකය

සෞඛ්‍ය අමාත්‍යාංශය

தேசிய டெங்கு தடுப்பு பிரிவு

සுகාතාර් அமைச்சு

National Dengue Control Unit

Ministry of Health



Telephone: (0094) 1 2368416, 2368417

Fax: (0094) 011 2369893

Email: ndcu2010@yahoo.com

මහජන සෞඛ්‍ය සංකීර්ණය, 555/5, ඒල්විගාලා මාවත, නැරාහේන්පිට, කොළඹ 05.
பொதுச் சுகாதார கட்டிடத் தொகுதி, 555/5, எலவிதல, நாராஹேன்பிட்டி, கொழும்பு 05.
Public Health Complex, 555/5, Elvitigala Mawatha, Narahenpita, Colombo 05.

09th April 2015

To the PEER Program

National Academy of Sciences

Washington D.C.

I write in support of the proposal of Dr. P.H.D. Kusumawathie (PI) and Dr. L. Zubair (co-PI) entitled "Dengue Risk Prediction based on Environmental, Entomological, and Societal Information to aid public health management in Sri Lanka and Maldives" to the PEER program.

I am the Head of the National Dengue Control Programme of the Ministry of Health in Sri Lanka and oversee its control in the country. The work covers all regions, vector control programs, dissemination programs and policy advice. Prof. Aravinda da Silva at the University of North Carolina University, the US partner to this proposal has collaborated with us for over a decade. The detailed study of the role of weather and climate and its potential use as predictors of dengue risk shall be valuable for our work. Therefore, I am glad to commend this project and to indicate my willingness to partner in the scientific research as well.

Sincerely,

Dr. Hasitha Tissera, MD
Consultant Epidemiologist
Head, National Dengue Control Unit,
Ministry of Health
555 Elvitigala Mawatha,
Colombo- 05

Director / Dengue Control
National Dengue Control Unit



ශ්‍රී ලංකා මහවැලි අධිකාරිය

500, ටී.බී. ජයා මාවත, කොළඹ 10.
இலங்கை மகாவலி அதிகாரசபை
500, டி.பி. ஜயா மாவத்தை, கொழும்பு 10.

Mahaweli Authority of Sri Lanka

500, T.B. Jayah Mawatha, Colombo 10, Sri Lanka.

දුරකථනය
தொலைபேசி
Telephone

011-2687491-5

ෆැක්ස් අංකය
பெக்ஸ் இல.
Fax No.

011-2687240

විද්‍යුත් තැපෑල
மின்துஞ்சல்
E-mail

mahaweli@eureka.lk

වෙබ් අඩවිය
இணையத்தளம்
Website

www.mahaweli.gov.lk

Water Management Secretariat
Mahaweli Authority of Sri Lanka
T.B. Jayah Mawatha, Colombo 10.
T.P. 2687289, 2687290 Fax 2687290

Date : 24 November 2011

To Whom It May Concern:

I write in favor of Dr. Lareef Zubair's proposal on the use of climate information for irrigation and renewable energy systems in Sri Lanka.

The Mahaweli Authority of Sri Lanka is the national authorized agency primarily responsible for water management, operation and maintenance of multipurpose reservoirs and social welfare in largest river basins in Sri Lanka. The WMS oversees the national-level decision making on water allocation coordinating, among the stake holders such as Irrigation Department, Ceylon Electricity Board, National Water Supply and Drainage Board, and farmer representatives. It is required to gather information (such as, rainfall, stream flow, reservoir levels, downstream releases, etc.), to execute the water resource system models to generate operational simulations and seasonal predictions. Thus it is very important to have more accurate and fast rainfall forecast for the decision making and operational schedules.

While Dr. Zubair's present contributions are invaluable, an enhanced role as envisaged in this proposal shall be even more welcome as he can help through better integration of climate information into the water resource system models that include hydro-electricity generation as well as irrigation.

Sincerely,

Eng. Thilaka Samarathunga
Director (Water Management)
Water Management Secretariat
Mahaweli Authority of Sri Lanka.

Eng. G.K.T. Samarathunga
Director
Water Management Secretariat
MAHAWELI AUTHORITY OF SRI LANKA
No. 500, T.B. Jayah Mawatha
Colombo 10.

The Pinga Oya Symposium



76/2 matale Rd, Akurana



Department of Geography,
Faculty of Arts,
University of Peradeniya

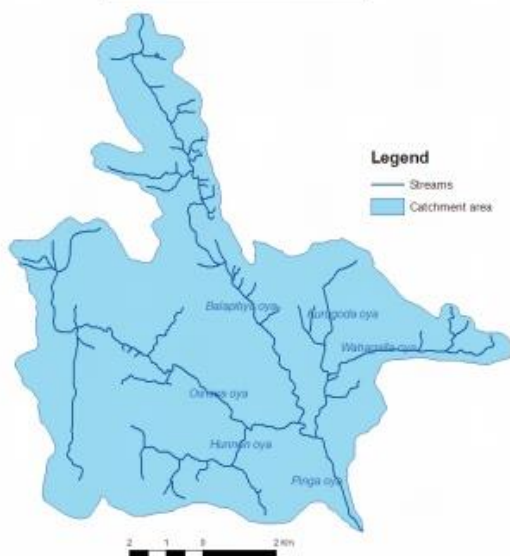
Water resource ecosystems are being increasingly stressed across tropical Asia. The Pinga Oya, a tributary of the Mahaweli River in Central Sri Lanka is a microcosm of such change. After an introduction to geographic, environmental, societal, institutional, policy and governance issues in the catchment of Pinga Oya, this volume provides the summaries of the proceedings of the Symposium on Pinga Oya compilation held on the 19 February 2013 at the University of Peradeniya



Pinga Oya catchment, Mahaweli River,
Coordinates: 80.6 °E 7.4 °N



Pinga Oya Catchment



Source: Department of Surveying (1988).
Created by: Foundation for Environment Climate Technology (FECT)-2013

Map: location and extent of Pinga Oya Catchment

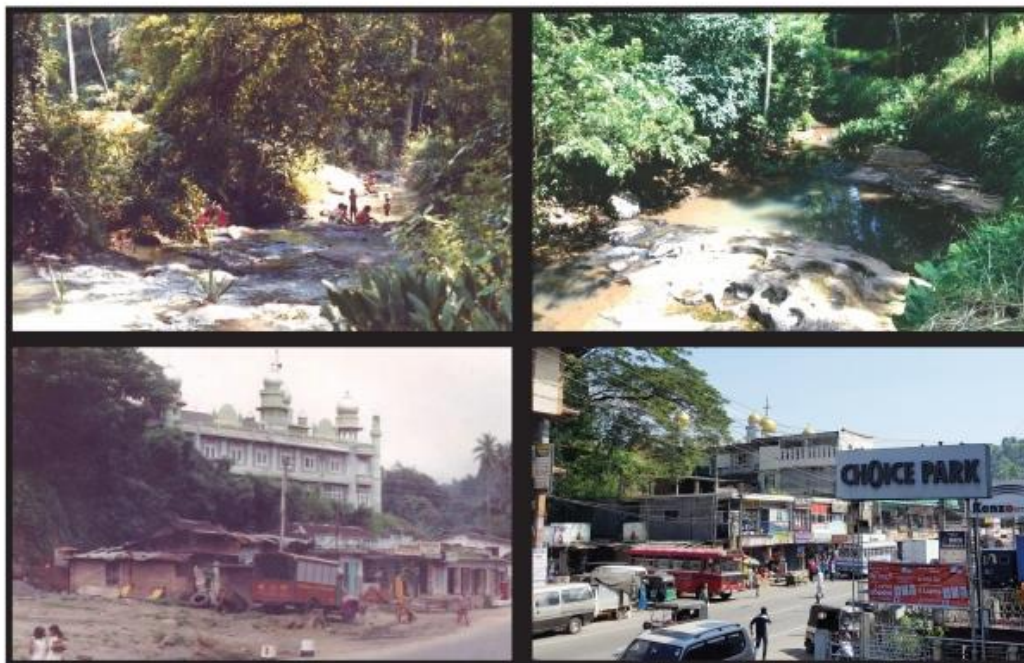
The goals of the symposium were to gather authoritative and comprehensive information on the Pinga Oya (PO).

Participants included researchers from the disciplines, academics, teachers, students, women's groups, local policy makers & a local media organization. The symposium provided a forum for academics from multiple disciplines and helped identify avenues for research priorities and for convenient access to the body of research education, local governance, and civic groups

The Goals were to gather information on social and environmental effects of Pinga Oya, and to start a following of activists that would assist future projects. Participants included researchers, university academics, teachers, students, women's groups, local policy makers and a local media organization. The presentations illustrated Pinga Oya and its current issues in a comprehensive manner. The Symposium provided a forum for academics from multiple disciplines, and is currently helping an ongoing collection of relevant research to identify avenues for future study



MONTHLY
NewsView



Contrasting photographs of the Pinga Oya Locale: 1981 (left) and 2016 (right)

Photographs: Top row- Upper reaches of Pinga Oya. Bottom row- Urbanization of Akurana town (6th Mile post)

About FECT

The Foundation for Environment, Climate and Technology is a registered non-profit organization in Sri Lanka, Camoros and New York since 2003. We work with universities, research institutes and other public, private and civic organizations. Our sponsors include: USAID, Columbia University, The government of Sri Lanka and the Maldives

Contributors

Prof. P. Wickramagamage
Dr. M.T.M. Mahees
Dr. Gemunu Herath
Ms. Lalitha Dissanayake
Ms. Sewwandi Chandrasekara
Mr. Farook Nawas
Dr. Lareef Zubair

Citation: Zubair, L., Wickramagamage, P. (2016). *Proceedings of the Symposium on Pinga Oya*, Kandy: Foundation for Environment, Climate and Technology, Pages 106, ISBN: 9 789554 047006.

Contact us

Address: Foundation for Environment,
Climate and Technology
76/2 Matale Road, Akurana,
KY 20850, Sri Lanka.

Telephone: +94-81-2300415
Email: info@tropicalclimate.org
fectsl@gmail.com

SOLID WASTE MANAGEMENT

FOUNDATION FOR ENVIRONMENT CLIMATE AND TECHNOLOGY

5TH JUNE 2017

ON COMMEMORATION OF THE WORLD ENVIRONMENT DAY

SOLID WASTE MANAGEMENT ?

Solid waste is a worsening problem in urbanizing Sri Lanka which is aggravated due to improper solid waste management systems.

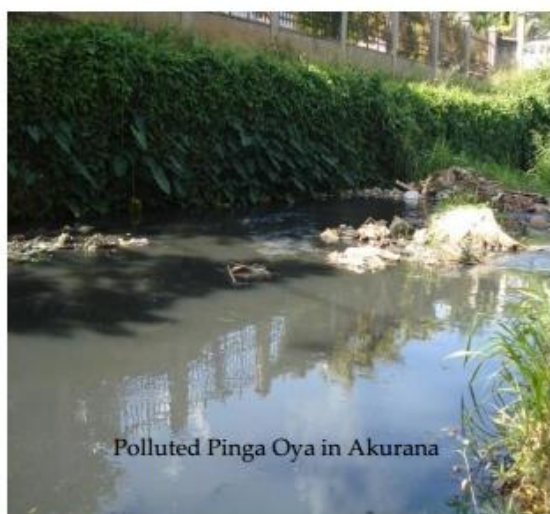
At present, solid wastes is mostly collected without sorting mixed state and are dumped in environmentally very sensitive places such as rivers, road sides, marshy lands, low lying lands, public places, forest and wild life areas. Causing ground and surface water pollution and air pollution.

WHAT CAN WE DO?

The easiest way to help is to reduce waste-generation, to refuse unnecessary purchases, to try to re-use existing things and then to recycle where possible over disposal.



So let's implement the "4R"



Polluted Pinga Oya in Akurana



We toned to create sustainable culture sustainable souls

WASTE IN THE PINGA OYA

The water in wells and rivers can show how bad pollution is – researchers tell us that a main reason for waste objects, polluted water, and siltation in the Pinga Oya is due to improper management of garbage. This directly affects the health of the river ecosystem including life in it, those who use the river, everyone else during floods and leads to mosquito breeding. A portion of the waste in our catchment finds its way to wells and water courses in Sri Lanka. People are affected by flooding during rainy seasons with road Floods, Dengue fever and mosquito problems soon after the rainy seasons



Foundation for Environment,
Climate & Technology

For the Application of Science for Societal Welfare and
Environmental Sustainability

Checkout Environment day Seminar by FECT:
www.tropicalclimate.org/envday/

Our Websites: www.climate.lk
www.tropicalclimate.org

Contacts

Foundation for Environment Climate and Technology,
76/2 Matale Road, Akurana, Sri Lanka
Phone: +94812300415 Email: info@tropicalclimate.org &
fectsl@gmail.com

Foundation for Environment, Climate, and Technology

Contributions to the

Masters in Development Practice at University of Peradeniya

Partners: Earth Institute at Columbia University, Maldivian Ministry of Environment.

Further information is available at: <http://www.tropicalclimate.org/mdp>



The Foundation for Environment, Climate and Technology (FECT) is an outgrowth of projects conducted by the Earth Institute at Columbia University in Sri Lanka and the Maldives on sustainable development and climate adaptation from 2000. FECT projects have covered water resources, wildlife management, public health, food crops and plantation agriculture, disaster risk management, and coastal zone hydrology. FECT initiated the development of the Masters in Development Practice (MDP) course at the University of Peradeniya with bringing partners together to formulate the pre-proposal and the proposal.



FECT offers its past projects, resources, & partners in support of the MDP program. The resources from FECT are accessible at <http://www.tropicalclimate.org/mdp>. MDP students can access our library, obtain case study reports, consult with our staff and be directed to our networks. More specifically FECT offered internship opportunities at partner institutions, developed course content for the Climate Change in South Asia and liaise with the Maldives institutions.

MDP Background

The Masters in Development Practice (MDP) course was launched by the University of Peradeniya in collaboration with FECT, Columbia University, the Open University and others in October 2011 <http://www.pdn.ac.lk/arts/econ/mdp/>. The program is hosted at the Department of Economics at the University of Peradeniya. The program is supported by the MacArthur Foundation, Chicago, USA as a node in a global network of 22 Universities that are offering MDP. The Global Masters in Development Practice Secretariat, based at Columbia University's Earth Institute coordinates the MDP network (<http://mdp.ei.columbia.edu/>).

The two year program has been designed to equip development practitioners to address sustainable development challenges across the sciences; *health, natural, social and management*. This cross-disciplinary academic curriculum promotes the development of knowledge, skills and other attributes of an effective professional. The curriculum at the University of Peradeniya has a focus on (1) Coastal Regions and Tropical Islands, (2) Millennium Development Goals and Poverty Measurement and Analysis, (3) Climate Change in South Asia, and (4) Technology for Sustainable Development

After the first year students may opt for a post-graduate diploma. A three month internship commences subsequently. Internships could be offered through the Foundation for Environment, Climate, and Technology, with availability depending on the host institutions (see overleaf).

FECT Foundation for Environment Climate and Technology

We started work in 2000 as a collaborative project between Columbia University and the Mahaweli Authority of Sri Lanka and chose to institutionalize all our work into a non-profit company hosted at the Mahaweli Authority. The Foundation for Environment, Climate and Technology was registered as a non-profit company in 2003 to use climate and environmental information for societal benefit and sustainability. We provide research, training and undertake projects and climate services in Sri Lanka, Maldives and Comoros.

Contact Details

Address: FECT,
76/2, Matale Road,
Akurana,
Sri Lanka.
Email: mdpfect@gmail.com and fectsl@gmail.com
Telephone: +94-81-2300415
Twitter: @fectsl and @fectmv

Further Information on FECT

Websites:

www.climate.lk
www.tropicalclimate.org/mdp
www.tropicalclimate.org/maldives
www.tropicalclimate.org/comoros
www.tropicalclimate.org/mdp

Blogs:

fectsl.blogspot.com
fectmv.blogspot.com

Collaborators and Internships

Collaborating Institutions

Sri Lankan Institutions

Mahaweli Authority of Sri Lanka
Departments of Irrigation and Meteorology
International Water Management Institute
Anti Malaria Campaign
National Dengue Control Unit
Coconut Research Institute
Tea Research Institute
Sugarcane Research Institute
Department of Wildlife Conservation
Department of Agriculture
University, Open, Jaffna, Ruhuna, Rajarata,
Eastern, South-Eastern, Sabaragamuwa,

Maldivian Institutions

Maldives National University
Maldives Meteorological Service
Renewable Energy Maldives
Health Protection Agency (Min. of Health)
Ministry of Environment
Male Water Supply Company

International Institutions

International Research Institute of Climate
- and Society, New York
Earth Institute at Columbia University
Indian Institute of Tropical Meteorology
Indian Institute of Science
Frontier Research System for Global Change
- Japan
National Aeronautical and Space Agency
- (NASA) – Maryland, USA.
Botswana Meteorological Service
University of Karachi, Pakistan
Small Earth Nepal.
FECT – Afrique, Moroni, Comoros

Internship Arrangements

We have tentative agreements with the following institutions to host internship placements.

1. Renewable Energy Maldives
2. Land and Marine Environment Resources, Maldives
3. Maldives Meteorological Service
4. Ministry of Housing and Environment, Maldives
5. Mahaweli Authority of Sri Lanka
6. Hydrodynamics Pvt. Ltd, Sri Lanka
7. Lanka Transformers' Limited, Sri Lanka
8. MAS Intimates, Sri Lanka
9. International Water Management Institute, Sri Lanka
10. UNDP Sri Lanka and Maldives
11. Male Water Supply Company, Maldives

We shall facilitate the communication between these institutions and MDP program. We encourage the participation of relevant officials in recruitment of students and in hosting interns. We have developed flyers on requirements for internship placements for students for these and a few other host institutions. Profiles of potential host institutions included in our website shall be useful for students to select an institution for their internship arrangement and helps to build liaison with students and the institutions. These are available at the FECT MDP website.

These institutions shall take in interns depending on their own needs at the time. There are also other institutions who are listed as partners who may take in interns if you have a specific interest.

Resources Available at FECT for MDP students

Projects

Completed project reports are available at <http://www.tropicalclimate.org/> which can be used as case studies.

FECT has projects related to development sector listed in a companion flyer. Students can participate in these ongoing projects for their internship program.

Staff

Our staff with expertise in climate, water resources and natural resources management, water resources, agriculture, public health, disasters and environment (see brochure at <http://www.climate.lk/>). FECT also has 50 alumni and adjunct staff working in related organizations who can be a resource for students along with about 25 overseas scientists, social scientists and academics.

Library

We have a collection of literature related to the natural sciences and sustainable development focusing on climate, water resources, agriculture (see <http://tropicalclimate.org/mdp/>). Our library catalogue can be accessed by students.

FECT can assist students with some environmental data acquisition for their internship projects and class projects.

FECT was formed while we were hosted by the Environment and Forest Conservation Division of the Mahaweli Authority of Sri Lanka. Thus, our work has consistently been oriented towards the needs of this division and other related divisions.

WORK WITH THE MAHAWELI AUTHORITY OF SRI LANKA

Some examples of our work are:

Helping soil conservation with climate information

We have worked with the Environment, Forest and Conservation Division of the Mahaweli Authority and we have assisted in the interpretation of soil erosion and deposits in river beds with a view to understanding its character.

Conserving river basins

E.g. we have brought together researchers, school teachers, local government officials and community group for environmental research on the Pinga Oya and for how to conserve this. We have organized schools programs with environmental officer of the local government authorities on improving solid waste management and river conservation. Our programs have brought experts from the Central Environmental Authority, Mahaweli Authority, the National Water Supply and Drainage Board among others.

Addressing the Role of Climate in Human-Elephant Conflict

We have worked with the Environment and Forest Conservation Division of the Mahaweli Authority and the Department of Wildlife Conservation on understanding the role of climate and drought on Human Elephant conflict. This helps them suitable prioritize catchment enrichment programs and to provide water for elephants at time of drought.

WORK WITH THE PUBLIC UTILITY COMMISSION OF SRI LANKA AND NORTH-WESTERN PROVINCE HEALTH AUTHORITIES ON AIR POLLUTION

Reducing Air Pollution Risks from Power Plants

We have shown shortcomings in the Air Pollution Modeling work done by the Indian Firm and the Industrial Technological Institute in the Environment Impact Assessment for the Sampur Coal Power Plant. These contributions were published and widely disseminated. Thereafter the Principal Scientist was invited to the Environment Committee of the Public Utilities Commission of Sri Lanka. There he has been undertaking field work, instrumental work and analysis to help mitigate environmental impacts of the Norochcholai Coal Power Plant. He also contributed to submissions to the Supreme Court in this regard.

Assessing Respiratory and infectious Disease Health Impacts in North-Western Province

We are working with the North-Western Province Health Department and local and national environmental organizations to set up climate and air pollution instruments and understand the impact on the respiratory and infectious diseases. Already the instrumentation is online.



ශ්‍රී ලංකා මහජන උපයෝගීතා කොමිෂන් සභාව
இலங்கைப் பொதுப் பயன்பாடுகள் ஆணைக்குழு
PUBLIC UTILITIES COMMISSION OF SRI LANKA



ඔබේ අංකය }
உமது இல. }
Your No. }

අපේ අංකය }
எமது இல. }
Our No. }

දිනය } 06/11/2019
திகதி }
Date }

Dr. Lareef Zubair,
Foundation for Environment, Climate and Technology,
76/2 Matale Road, Akurana
Kandy.

Dear Dr. Zubair,

This is to record our appreciation for accepting our invitations to serve on the review committee of the Environmental Impact of the Norochcholai Coal Power Plant and ways to mitigate these impacts since 2016 to end of 2017.

Your contributions through multiple meetings, consultations, document editing, field visits, sharing of scientific findings and consultation with the distinguished members of this committee is highly appreciated.

Yours sincerely

Damitha Kumarasinghe
Director General

06.වන මහල, ලංකා බැංකු මෙලුදා තුළින්,
28, ශාන්ත මයිකල් පාර, කොළඹ 03.

06 ஆவது மாட, இலங்கை வங்கி வர்த்தகக் கோபுரம்,
28, சென் மைக்கல் வீதி, கொழும்பு 03.

Level 06, BOC Merchant Tower,
28, St. Michael's Road, Colombo 03, Sri Lanka.

Tel: +94 11 2392607/8

Fax: +94 11 2392641

E-mail: info@pucsl.gov.lk

Web: www.pucsl.gov.lk

සභාපති
தலைவர்
Chairman

+94 11 2392604

අධ්‍යක්ෂ ජනරාල්
பணிப்பாளர் நாயகம்
Director General

+94 11 2392606



ප්‍රාදේශීය ලේකම් කාර්යාලය - අකුරණ
பிரதேச செயலகம் - அக்குறணை
DIVISIONAL SECRETARIAT - AKURANA

මගේ අංකය }
எனது இல }
My No }

ඔබේ අංකය }
உமது இல }
Your No }

දිනය }
திகதி } 2017.05.26
Date }

Flooding of piga Oya has become one the major calamities occur in akurana division.Recent floods in Akurana is now a coactive result of heavy rains.But history of this problem is very short.There are many possible causes behind awful matter.

However , we should accept that the main causes of this matter are urbanization and man made pollution factors.It is not really hard to understand this matter for a person who recollect the changes of piga Oya and the changes in the build environment in the river.

I admire and describe “Symposium on pinga oya”as an attempt which has been taken to explore and analyze the critical situation of piga Oya in an advanced way.publishing a printed note of anailized data and information would make and impact and I think it would attract the attention of more people towards this critical matter.So I personally do admire this attempt.

Madhawa Warnakulasooriya

Divisional Secretary,

Divisional Secretariat office,

Akurana.

Madhawa Warnakulasooriya
Divisional Secretary
Akurana,

දුරකථන	081-2300504	தொலைபேசி	081-2304022	ෆැක්ස්	081-2300504	විද්‍යුත් තැපෑල	ds@akurana.ds.gov.lk
njhiyNgrp Telephone	081-2304895 081-5626680	gpuNjr nrayhsu; Divisional Secretary	ngfj; Fax			E-mail	



“മിഷൻ ലഭിക്കാൻ വിശദമായ പദ്ധതി പാലയ ഘടനയെ മെറ്റ പന്തി”

අකුරණ ප්‍රාදේශීය සභාව அக்குரணை பிரதேச சபை Akurana Pradeshiya Sabha

අලවතුගොඩ අලවතුගොඩ Alawathugoda



කාර්යාලය/காரியாலயம்/ Office: 066-2244387
 ෆැක්ස්/பெக்ஸ்/ Fax: 066-2056913
 විද්‍යුත් තැපෑල/மின் அஞ்சல்/ Email: cpcaps387@gmail.com
 apscpc@yahoo.com

සභාපති/தவிசாளர்/ Chairman: 066-2244612
 උප සභාපති/உதவித் தவிசாளர்/ Vice Chairman: 066-2242107
 ලේකම්/செயலாளர்/ Secretary: 066-2244387


It gives me pleasure to provide this message for the 15th Anniversary of the Foundation for Environment Climate and Technology. The climate and environment plays a critical role in influencing lives, and livelihoods of our region including contributing to awareness on environmental problems and the risk of disasters. In this regard, the use of advanced technologies such as has been undertaken by FECT is useful for our region and beyond.

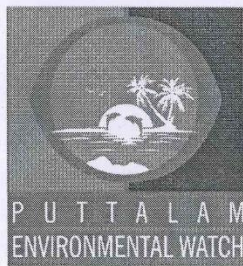
At the Akurana Pradeshiya Sabhawa, we are mandated to conduct education and awareness programs on the environment and support disaster management activities. We have an environmental committee that includes others from related institutions and community. We support the ongoing activities of the relevant central government agencies. Our Environment officers' conduct ongoing awareness programs.

In this regard, FECT has collaborated effectively with us. For example, we have jointly conducted a one-day program for environmental awareness for the Environment Day for six schools in the Pradeshiya Sabhawa on 12th June 2013 with the sponsorship of FECT. This program was very successful and brought in expert speakers on environment, waste management, water supply, infectious diseases and gave an opportunity for the schools to perform dramas and songs. FECT has participated in several other programs within the Akurana area as well and supported other organizations.

The installation of weather stations by FECT and the free distribution of data online shall be very useful for the Akurana area. This can help with understanding the rise in flooding in recent years and the occasional landslides and droughts that are experienced in some parts of Akurana.

Hence, I congratulate FECT on its successful work and wish FECT success in its continued service.


 T.S. Rajapaksha
 Secretary
 Akurana Pradeshiya Sabha
 Alawathugoda.



PUTTALAM ENVIRONMENT WATCH

Aqua Land, Mannar Road, Puttalam.

envwatchpx@gmail.com Mobile: +94772427625

President:

H.S. Nafras

Civil Engineer

Vice President:

A.Arshad Ali

Resilience Practitioner

Joint Secretaries:

1. S.M. Mubarak

Development Planner

RtdDev planning Unit

UNDP

2. U.K. Nadheeha

Sociologist

Treasurer:

M.A.L.M. Asharook

Social Activist

Legal Officer:

S.S.M. Sajath

LLB, Attorney-At-Law

Public Relation Officer:

A.W.M. Isfaq

Social Activist

Auditor:

M.H Hafileen

Accountant

Special Assignment

Co-ordinators:

S.M Dhillasan

Environmental Activist

Padmanaatha

Environmental Activist

Committee Members:

M.LareefaHadhi

Rtd.Project Officer, UNDP

MorisJaganathan

Biologist

S.F Shareeka

Social Worker

S.F Shehara

Social Worker

PEER Program

National Academy of Sciences

Washington D.C.

We are an Environmental organization with a social service agenda in, Puttalam District. Solid waste Management, Air pollution and Water quality has been deteriorating in Puttalam District in the North Western coast of Sri Lanka and this has become an intolerable hazard and is an enduring impact on the community. We have been working on such environmental issues for the past years in the Puttalam district. It is in this context that we were able to work with the team of Foundation for Environment, climate and Technology (FECT) over the last years to set up a weather station and low-cost air pollution instruments in Puttalam.

We shall be happy to support this team to continue in this proposed work.

Thank you,

Sincerely,

Joint Secretary

AIR QUALITY MONITORING

SUMMARY:

Hazards from air quality has been rising alarmingly across Asia. At FECT, we are helping understand the risks by undertaking monitoring, relating it to weather and climate, modeling and diagnosis and impact analysis. FECT has setup air quality monitoring devices in seven locations around Sri Lanka and in Maldives. We obtain real-time data through these instruments and carryout monitoring and analysis based on these data.

Foundation for Environment, Climate, and Technology [FECT] | Disaster Services [DS]

CONTACT INFORMATION

Foundation for Environment,
Climate, and Technology,
76/2, Matale Road, Akurana,
Sri Lanka.

Phone : +94 81 230 0415

E mail : fectsl@gmail.com

Web : www.climate.lk
www.disaster.lk

Facebook : <http://facebook.com/fectsl>

Twitter : <http://twitter.com/fectlk>

Mis. Piushani Ellegala

Email : puishanifect@gmail.com

INTRODUCTION:

Air quality in Sri Lanka has been worsening due to the rapid rise in emissions of particulate matter and noxious gases from vehicular traffic, industrial emissions particularly from thermal power plants, rapid urbanization and trans-boundary transport of atmospheric contaminants. While vehicular emissions is important within urban locations, the larger industries are important for the rural areas.

Our work on air quality focuses on analyzing the transportation of pollutants by installing air quality monitoring instruments and monitoring the data obtained from these instruments.

Our research in informing air pollution policy has been undertaken by diagnosis of all available data, monitoring in critical locations, and in urban settings and modeling air pollution transport. This research has informed the current debate on the choice of coal power plants or renewable energy for future electric grid capacity expansion via the newspapers, social media and a Fundamental Rights submission to the Supreme Court by farmers, fisher folks and villagers affected by the only coal plant in place at present.

The US Embassy has hosted our Air Quality instruments for calibration next to their EPA certified instruments in Colombo. We have provided the results in the public domain.



AIR QUALITY INSTRUMENTS

In Sri Lanka

- » Akurana
- » Norochcholai
- » Nawalapitiya
- » Puttalam
- » Illanthandiya
- » Colombo
- » Digana

In Maldives

- » Male

Purple Air and AirVisual devices being IoT devices can transfer real-time data which can be monitored online and is stored using the weather underground cloud service.



AirVisual Instrument Fixed at the US Embassy, Colombo

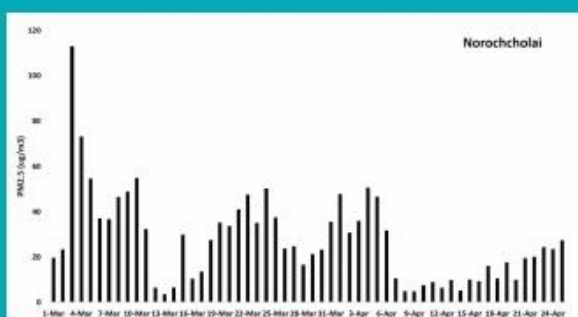


Purple Air Instrument Fixed at the US Embassy, Colombo

Our Purple Air and AirVisual devices were first calibrated with a higher quality that is certified – BAM device compare adequately in terms of magnitude and variations



DIAGNOSIS AND MODELING



Daily PM2.5 observations at Norochcholai for March and April, 2018



Daily PM2.5 observations at Colombo for March and April, 2018

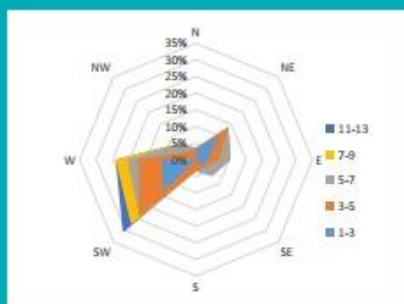
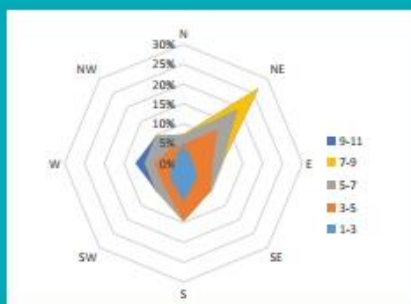


Daily PM2.5 observations at Nawalapitiya for March and April, 2018

ABOUT FECT

Foundation for Environment, Climate and Technology was established to promote environmental and climate technology and its applications in multiple fields. FECT builds on the work of the officers in Sri Lanka and internationally. Our work is oriented towards developing useable scientific and technological information that can be applied by users in diverse sectors. We work actively with other Sri Lankan partners in Government institutions, Research Institutes, and Universities.

We are analyzing the relationships between emissions from Norochcholai and Colombo and its transport to the hills. We have analyzed the spatial variation in Kandy, Akurana and Puttalam.



Wind roses from Kurunegala located within the triangle of these sites for March 2018 (left) and for April (right) 2018.

ONLINE ACCESS TO OUR AIR QUALITY WORK:

<https://disaster.lk/airquality>

www.climate.lk

IMPACT ANALYSIS

Our partners and us are undertaking field work to estimate ecological and health consequences of air pollution.



SUMMARY

Our contributions to poverty relief are both direct and indirect. We help manage disasters, conserve water resources, improve agricultural choices, and mitigate infectious disease risk through early warning systems. Some examples are:

- **Services for organizations serving public**
Government organization that are servicing the public such as the Mahaweli Authority, the Red Cross, Anti-Malaria Campaign, Regional Health Services, National Dengue Management Centre.
- **Direct relief in times of Natural Disasters**
 - i. Emergency Water Treatment Plants (Tsunami)
 - ii. Provision of weather updates to aid relief (Tsunami and other disasters)
 - iii. Compilation and Provision of Research and Knowledge Products (Our websites during the Tsunami recoverlanka.net and www.geoloanka.net were widely used as the authoritative sources.
 - iv. During disasters and epidemics, we provide guidance through social media and assist the mass-media's efforts
- **Direct relief in times of Man-made Disasters**
We have responded to the immediate needs of the affected with an allocation of office space, dedicated staff and other resources. The goals were to document the events of March 2018, its drivers and address the factors that led to conflagration and assess the failures and successes in ameliorating conflict. Such documentation, assessments and diagnosis shall help assess the drivers of conflict, help us identify the risk factors and eventually come up with community-based risk prediction.

TSUNAMI RELIEF (2004)

After the tsunami on the 26th December 2004, two websites were developed to find to contribute to the recovery effort. It provided the topical information about tsunami disaster, Sri Lanka disaster management and health care, updated on the evolving situation on the ground, requests for assistance, offers of assistance, maps, information on regional weather and climate, networking tools and information on organizations that were involved in relief particularly small community based organizations and contains links to related websites and effort. It provided a GIS based interactive mapping tool that can help contextualize relief work spatially.

EMERGENCY WATER TREATMENT SYSTEMS FOR TSUNAMI AFFECTED AREA (2005)

In the aftermath of tsunami a pressing problem for the affected was the lack of potable water. There was a request for water treatment equipment's, from Prof. Raveendranath the acting Vice-Chancellor at the Eastern University to Dr. M. C. M. Iqbal and Dr. Lareef Zubair. This request came after testes proved the almost all the wells, even those inlands have been contaminated by the tsunami and is unsustainable for human consumption. FECT has fabricated and installed a prototype unit at the eastern university's disaster management center with instructions on reproducing it.

The need for climate expertise in evaluating the impact of air pollution due to coal and other industries encouraged us contribute to report submitted to the Supreme Court on hearing on the environmental impact assessment at Sampur, Trincomalee. FECT contributed to the environment committee of the public utilities commission of Sri Lanka which is charged with regulating electric utilities. Further we undercooked dissemination through the national newspapers, popular news websites and social media.



Principal Scientist with the Coordinator of the Relief Camp during the Tsunami, Prof. Raveendran, and Vice Chancellor of the Eastern University in the week after the Tsunami and the Installed Water Treatment Plant at the Eastern University, Chenakaldy, Batticaloa.

RELIEF IN TIMES OF MAN-MADE DISASTERS

We have responded to the Mob Violences in Kandy which affected our staff to address immediate needs of the affected. We helped document the events of March 2018, its drivers and address the factors that led to conflagration and assess the failures and successes in ameliorating conflict. Such documentation, assessments and diagnosis shall help assess the drivers of conflict, help us identify the risk factors and eventually come up with community-based risk prediction.

SUPPORT FOR HEALTH SERVICES

Our work on infectious diseases and respiratory diseases helps the health services improve the targeting of their work.

All the topics that we work on produce knowledge, content, curricular training, and education are of particular interest nationally and in the wider Indian Ocean region and even internationally. Just to address one topic, we consider climate change.

CLIMATE SERVICES AND CLIMATE RISK MANAGEMENT

Climate services refers to the provision of climate information tailored to the needs to the users. We have provided such services to guide environmental decision making such as on soil conservation, infectious disease risk, water management and agriculture as listed below.

CLIMATE ADVISORIES FOR WATER MANAGEMENT SECRETARIAT

Since 2005, FECT has been providing a weekly climate report at the request of the Water Management Panel which provides for national water resources planning and is hosted by the Mahaweli Authority of Sri Lanka. This panel includes representatives from the Mahaweli Authority, the Ceylon Electricity Board, the National Water Supply and Drainage Board, the Irrigation Department and other invitees. This weekly report comprising monitored and predicted climate information is generated by Friday morning so as to be available for consultation by the Water Management Panel. Through the consultation of climate information, these resource managers are able to take more optimal decisions to balance the interests of farmers, downstream dwellers, ecosystems, hydropower generation, and flood risk management.

Reference: Chandrasekara, S.S.K., Zubair, L., Bell, M. et al. (2013). Experimental climate services for water management in Sri Lanka and Maldives. Sri Lanka Water Convention 2013. Conference Proceedings. National Water Supply & Drainage Board, Sri Lanka. ISBN 978-955-4731-00-4. P 37-41.

CLIMATE BASED COCONUT YIELD PREDICTION

We supported Coconut Research Institute Scientists development of a prediction algorithm for Coconut Yield up to 5 months in advance. The use of advanced climate information and impact analysis improved the skill of these predictions. These predictions help improve policy planning for the coconut sector such as on marketing, import, subsidies and drought preparedness.

Reference: Peiris, T.S.G., Hansen, J., & Zubair, L., Use of Seasonal Climate Information to Predict Coconut Production in Sri Lanka, International Journal of Climatology. (2008)

UNDERSTANDIGN CLIMATE CHANGE AND ADAPTING TO IT

As recognized by the United Nations, the Government of Sri Lanka, and in statements of successive government leaders, one of the most profound topics of human interest is Climate Change. We have contributed immensely in this field for example:

- We contributed to the Neela Haritha program of the Ministry of Environment with expository articles and presentations.
- Our scientists provided key-note address on climate change to the pre-eminent body of Sri Lanka Scientists — the Association for the Advancement of Science — in 2013 as an example.
- We have partnered with the Department of Agriculture, the Mahaweli Authority of Sri Lanka, the Universities of Peradeniya, Ruhuna and Rajarata in leading a study on the impact of climate change on Sri Lanka agricultural systems particularly rice and sugar cane farmers.

We have contributed to making climate information accessible – below is an example.

MAINSTREAMING CLIMATE INFORMATION

FECT contributed to the workshop on Mainstreaming Climate Information Application for Enhancement of Agro-ecosystem Services and Functions in the Nilwala Basin, organized by the Asian Disaster Preparedness Center and the Faculty of Agriculture of the University of Ruhuna to initiate a program on technology interventions to meet the challenges associated with climate change in paddy ecosystems in the Nilwala River.

ADVANCING CAPACITY FOR CLIMATE RESEARCH

We have been advancing research capacity in multiple ways – serving on various national organizations, University panels and by supporting those who solicit our help. Below, we describe three efforts to preserve Observing systems, and develop network of researchers.

PRESERVING THE COLOMBO METEOROLOGICAL OBSERVATORY



Meeting at the Director General's office of the Sri Lanka Department of Meteorology - 2003

Data since 1853 is available at the headquarters of the department of meteorology where the most careful meteorological measurements have been conducted in Sri Lanka. It is also the only site from which radiosonde measurements are carried out. However, in 2004 the British High Commission wanted to acquire a part of the land from the east end of the Department of Meteorology, which was adjoining the residence of the British high commissioner. The department had been resisting this move initially, but when the order came from the highest authority, the government protocol prevented the department officials from making any objection. In accordance to this issue on behalf of the scientific community in Sri Lanka an extensive attempt was made by FECT by appealing to stop the takeover

of this land by the British High Commission, thought letters addressed to relevant authorities and newspaper articles. www.climate.lk/cot

SRI LANKA METEOROLOGY, OCEANOGRAPHY AND HYDROLOGY NETWORK

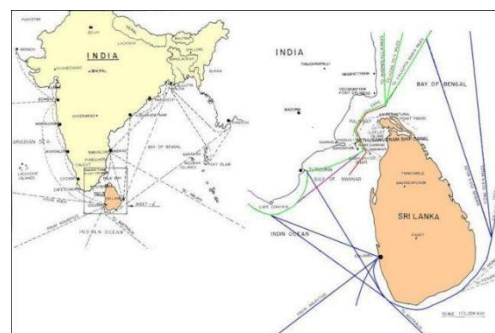
Since there is no national organization in Sri Lanka that covers these topics, we have started a free network through which there can be interactions by email and mail. Newsletters were issued several times a year starting in 1998. These newsletters are archived at our websites. www.tropicalclimate.org/slmon/

PROTECTING THE COASTS AND SEAS AROUND US

People in Sri Lanka and other countries in and around the Indian Ocean are dependent on the oceans much more than they understand for security, livelihoods, health and the environment. This is primarily due to the lack of knowledge and awareness. As the oceans change in ways not known, mankind can no longer remain oblivious except at great cost. We address ocean issues substantially in our work through feature articles, research publications and contributions to the public discourse. Some of the specific topics that we have addressed are:

SETHUSAMUDRAM

The Sethusamudram project was proposed by the defense minister of India in 1999, George Fernandes includes a canal that is to be excavated through the Palk Straits. This had raised many questions in Sri Lanka about the impact of the project on Sri Lanka. The aim of this project was to reduce the travel time of Indian ships that have to circumnavigate Sri Lanka. But this project earned the concern of the people of Sri Lanka and Tamil Nadu due to its potential grave environmental impacts. FECT contributed to multiple meetings on the topic to bring awareness including with the National Aquatic Research Agency, the University of Peradeniya and the Kandy Nature Society to bring the



critical information to the attention of the relevant authorities. We also published articles in the newspapers. Although there was a massive drive, it has still not materialized due to the objections. Details at www.climate.lk/cot/

UNDERSTANDING THE IMPACT OF WARMING SEAS ON CORAL REEFS

In recent years, the El Nino Climate phenomenon and Climate Change have had disastrous consequences for Coral Reefs around Sri Lanka and in the wider Indian Ocean. Our work has led to understanding the changing sea surface temperatures as this is the primary driver on coral bleaching.

ASSESSING IMPACTS OF CHANGING STREAMFLOW ON SEASONALLY AND INTERMITTENTLY OPEN COASTAL INLETS

Sri Lanka has large number of coastal water bodies — lagoons, estuaries, bays, river mouths which all exist in equilibrium between the fresh water from rivers and the sea water. A profound impact is the seasonal breaching of the sand barriers in Sri Lanka. We have clarified the impact of climate in the changing timing of these barriers.

PROMOTING UNDERSTANDING OF CLIMATE ON OCEANS INFORMATION

FECT contributed two research papers to two workshops organized by the National Aquatic Research Agency and its partners on this topic. FECT staff members have also provide 4 feature articles on this topic.

ASSISTANCE AND CONTRIBUTIONS TO OTHER CHARITABLE ORGANIZATIONS

We assist and collaborate with a variety of organizations such as Bridging Lanka, Puttalam Environmental Watch, the Environmental Law Foundation the social service officers in our locality. Some of our sustained contributions were to the Akurana Womens Welfare Association, the Community Services Movement, and Newsview organization and these are described better below.

ASSISTANCE TO AKURANA WOMEN'S WELFARE ASSOCIATION

Technical support was provided to the Akurana Women Welfare Association (AWWA) and to the Community Service Movement. For Akurana Woman's Welfare Association a web presence and social media platform was set up. Meetings of these organizations were provided with audio-visual aids and recording. We supported the development of proposals by AWWA. We also supported the publication of its magazine – Kurinchithean.

We have helped with the digital and other services Akurana Women's Welfare Organization. A web presence (www.awwa.lk) and social media platform was set up. It serves as a portal for future journalism.



A meeting between FECT and AWWA members to discuss the website for AWWA



Instructions on Providing proper garbage disposal system by AWWA members – FECT helped document and publicize this

ASSISTANCE TO COMMUNITY SERVICES MOVEMENT

Technical, Administrative and Financial support was provided to the Community Service Movement (CSM). CSM carried out projects such as:

- Conducting free medical camps.
- Providing hearing aids and spectacles and distributing wheel chairs.
- Conducting health awareness programs.
- Donating stationery and sports items to the under privileged schools
- Providing containers to facilitate proper garbage disposal system
- And set up a *School for Disabled Children*.

ASSISTANCE TO THE NEWSVIEW REGIONAL NEWSPAPER

Newsview is a registered regional monthly newspaper primarily in Tamil but with content in Sinhala and English that operates as a service. FECT has assisted Newsview with contributions of a dozen news articles. Proposals development by News View was supported by FECT. One of these proposals on Upgrading Tamil Journalism in Central Province was granted and it has been implemented successfully. FECT has contributed substantially for this – for curriculum development, provided lectures on digital literacy and security and helped set up a news-website to supplement its social media.



විදේශ කටයුතු අමාත්‍යාංශය
வெளிநாட்டு அலுவல்கள் அமைச்சு
MINISTRY OF FOREIGN AFFAIRS

ජනරජ නොවැව්විල්ල, කොළඹ 1, ශ්‍රී ලංකාව குமரவகல் அட்டை, கொழும்பு 1, இலங்கை Republic Building, Colombo 1, Sri Lanka

මගේ අංකය
எனது இல
My No

ඔබේ අංකය
உமது இல
Your No

දිනය
திகதி
Date

23.05.2017

Dr. Lareef Zubair
Principal Scientist
Foundation for Environment, Climate and Technology
76/2 Matale Road
Akurana

Dear Dr. Zubair,

Further to the meeting on 22nd May 2017 at the Ministry with Ms. Sashikala Premawardhane, Actg. Director General, Ocean Affairs, Strategic Security, Climate Change and Policy Planning and the undersigned, the inputs you provided pertaining to climate change are beneficial in developing the scope of this new Division.

The insights you provided based on your work and that of the Foundation for Environment, Climate and Technology are valuable in developing a strategic plan for this new Division.

As discussed, Ms. Premawardhane, the Actg. Director General will be in contact with you and we hope you will continue to share your expertise and suggestions in taking some of the initiatives discussed at the meeting on climate change forward through this new Division.

While thanking you for your presence, your kind cooperation in this regard, is appreciated.

Thanking you,

Yours sincerely,

Sithara Khan
Actg. Director General/Economic Affairs and Trade
(for Secretary/Foreign Affairs)

දුරකථන
දුරකථන
Telephone

2325371-5

ෆැක්ස්
பொது
Fax

2333450
2446091
2430220

ඊ-මේල්
மின்துறை
E-Mail

cypher@mca.gov.lk

වෙබ් අඩවිය
இணைய தளம்
Web site

www.mca.gov.lk

Experimental Hydro-meteorological Advisories for Sri Lanka...

FETC has been providing weekly hydro-meteorological advisories for the Water Management Secretariat (WMS) of the Mahaweli Authority of Sri Lanka since 2008. The advisory reviews and interprets weekly to seasonal monitored climate and predictions from 3-days to 6 months ahead from various agencies and scientists including our own. These advisories are reviewed weekly by participants in the Water Management Panel from the Ceylon Electricity Board, Department of Irrigation, Mahaweli Authority and Water Supply Board in deciding on large scale water allocations for systems in the Mahaweli, Kelani, Walawe and associated basins.

The Weekly Hydro-Meteorological Advisory

The weekly report consists of two parts namely *Monitoring and Predictions*. Monitoring Includes Daily Satellite Derived Rainfall Estimates, Monthly and Dekadal (10 Day) Satellite Derived Rainfall Estimates, and the Weekly Average SST Anomalies. Predictions include forecasts for the subsequent week from Indian Meteorological Department, and NOAA, a 30 day forecast from Paul Roundy of SUNY-Albany and seasonal precipitation and temperature predictions from the International Research Institute for Climate and Society.

What it Conveys?

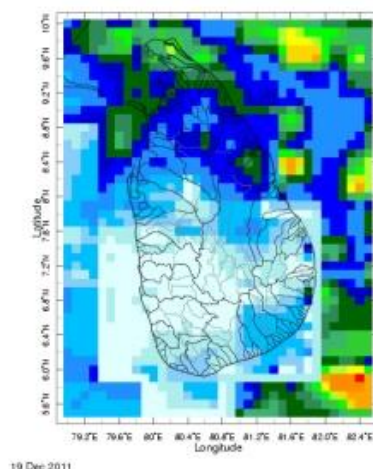
1. Monitoring

- Daily Satellite Derived Rainfall Estimates
- Monthly Rainfall Estimates
- Dekadal (10 Day) Satellite Derived Rainfall Estimates
- Weekly Average SST Anomalies

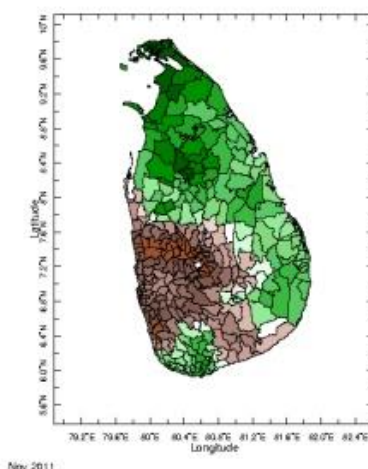
2. Predictions

- NCEP GFS Ensemble 1-7 day predictions, NOAA, CPC,USA
- IMD WRF Model Forecast
- Weekly Precipitation Forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

Examples of Climate Monitoring of Daily Rainfall, Rainfall Anomalies and SST



Daily Satellite Derived Rainfall for 19th Dec 2011



Monthly Satellite Derived Rainfall Anomaly, Nov 2011

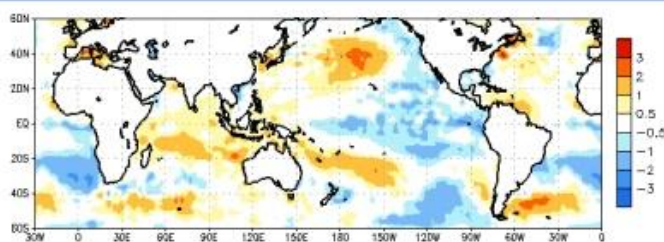
Source: NOAA-CPC and IRI



FECT

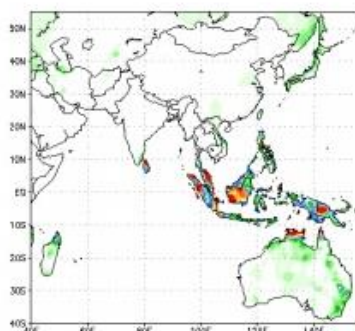
Partners

Mahaweli Authority of Sri Lanka (MASL)
International Research Institute for Climate and Society (IRI)
State University of New York, Albany (SUNY)
Indian Meteorological Department (IMD)

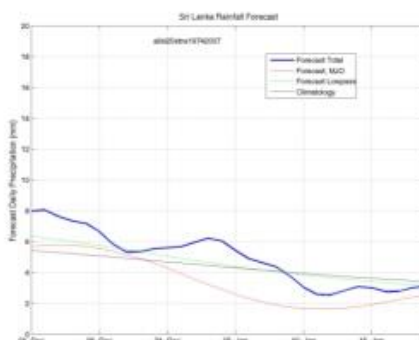


Weekly Average Sea Surface Temperature (SST) Anomalies (°C), 14th December, 2011

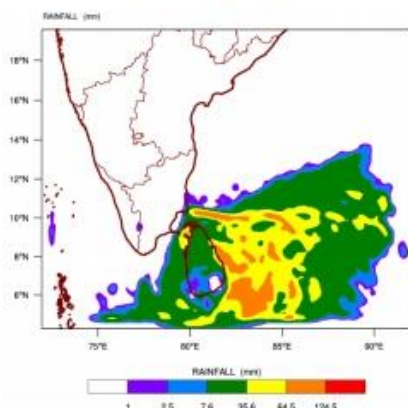
Example of Climate Prediction Products



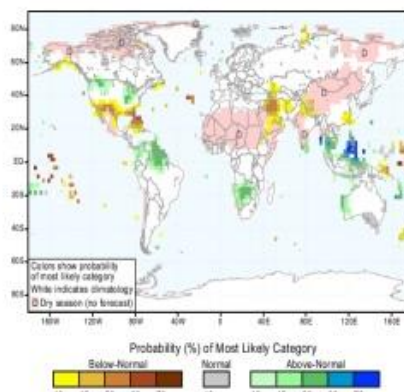
NCEP GFS Ensemble 7 day rainfall predictions,
NOAA, Climate Prediction Centre, USA.



30 Days ahead predictions for rainfall by Paul
Roundy



Indian Meteorological Department WRF Model
Forecast (72 hr) Rainfall (mm) valid for 24-12-2011



Seasonal Rainfall Predictions for January to
March 2012 from IRI

The WMP & WMS at MASL

Mahaweli Authority of Sri Lanka (MASL) oversees all Government Agencies concerned with the management and operation of the Mahaweli river basin and six associated basins. The Water Management Panel (WMP) of the MASL oversees overall management of the water resources of the Mahaweli system. The WMP is assisted by a specialized Water Management Secretariat (WMS). The WMS provides information and recommendations to the WMP to assist it in reaching its operational policy decisions.

Availability and Accessibility

This report is accessible at <http://fectsl.blogspot.com/>. Currently this report is being prepared as an experimental advisory for technically proficient users. In future we hope to make it accessible for the use of others who may need this for their reference.



*An Institute for the
Application of
Science for Societal
Welfare &
Environmental
Sustainability
focusing on Sri
Lanka and Maldives*

We started FECT as a non-profit company in 2003. Our officers have been working on projects on environment, climate and technologies in Sri Lanka for 15 years. At present, we work in climate adaptation, information technology, communication and capacity building for sustainable development.

Our work is oriented towards developing useable scientific information that can be applied in diverse sectors. We build capacity through education, training, and collaborations.

Contact for Information

FECT,
76/2,
Matale Road,
Akurana,
Sri Lanka.
Tp: +94-81-2300415
Email: fectsl@gmail.com

Web: www.climate.lk



Akurana Women's Welfare Association

WWW.AWWA.LK

Website Soft Opening - 12th December 2017

This website will provide information and support on Akurana Women's Welfare Association (AWWA) activities. AWWA caters to the welfare of its members. Awwa.lk is developed and maintained as multilingual website providing information in Sinhala, Tamil and English.



- AWWA.LK provides news of the association.
- Education, Health, Environment and Home Gardening, Micro-Industries and Vocational Training, Religious and Cultural, External Relations and Finance programs.
- Updates of Office bearers, Formalities, Awards, Proposed goals of short term and medium term,
- Online membership registration
- E-magazine of Kurinchiththean and ordering information,
- Office, Web, IT Contacts.
- Twitter, Facebook and Mailing list application, Flickr.

Foundation for Environment, Climate and Technology (www.climate.lk) developed this website

Office Address

190/2/14, Market building,
190 Matale Road, Akurana
Sri Lanka
Email: awwa_lk@outlook.com
Twitter: @awwa_lk

Website Maintenance

c/o FECT,
76/2 Matale Road,
Akurana, KY 20850
Telephone: +94-81-2300415



CONTRIBUTIONS TO OTHER INDIAN OCEAN ISLANDS

While we initiated our work in Sri Lanka, we had invitations to contribute in other neighboring countries as well. The need for climate and environmental information is dire in the Indian Ocean Islands and there is very little capacity to address it within these countries. Climate Change, Sea level rise, Ocean acidification and ocean ecosystem changes and mass fish die-offs shall lead to threats to the existence of life on these islands within a life time. These impacts are early warning systems for rest of humanity. We leverage our capacities to extend and support the work in Maldives, Comoros, Zanzibar and Chagos while also participating in climate change related work for Seychelles and Mauritius and other Indian Ocean Islands.

These contributions are to the benefit of global mankind as the Indian Ocean is the least monitored and understood ocean. For example, sea level studies and ocean warming studies are robust only if data from across the oceans are brought together. Climate and Oceans interactions do not respect political boundaries and understanding across the Oceans serves all particularly within the Indian Ocean basin.

SERVICES IN MALDIVES

In the Maldives, we initiated work at the invitation of the then Minister of Environment. We have collaborated with most of the relevant Maldivian research and service organizations. We are completing a decade of research, projects, education and training activities. We have also helped set up an independent non-profit organization called FECT-Maldives. These activities are detailed in our 10th Anniversary report for the Maldives. Some of the highlights are below:

CLIMATE ADVISORIES

FECT has been providing weekly hydro-meteorological advisories for the Maldives since 2011. The weekly report consists of two parts namely Monitoring and Predictions. This report is prepared by Foundation for Environment, Climate and Technology, Maldives Meteorological Service, and Columbia University. It is released on fectmv.blogspot.com and on www.climate.mv

WORKSHOP ON CLIMATE AND WATER SECURITY

FECT and Maldives National University (MNU) organized a workshop in Male' on the 13th of September 2015 at the auditorium of MNU on climate and water security in the Maldives. The goals of this workshop include expertise on climate and water, review the state of knowledge, and identify research priorities and educational needs.

The presentations focused on sustainability of water resource management, climate and water resources linkages, climate monitoring and predictions for water management, the Climate Advisory for Maldives, and lessons learned from ongoing programs and projects.



Participants at the workshop held in Male, Maldives National University.



Dr. L. Zubair explaining at the workshop on climate and water security at the Maldives National Univ.

STEM WORKSHOPS FOR SCHOOL STUDENTS IN SOUTHERN MALDIVES



FECT together with Small Island Research Centre/Group (SIRC/G) organized two workshops for middle school students of the Huvadho School and Gaafu Dhaalu Atoll Education Centre in Southern Maldives. The aim of these workshops were to promote Science, Technology, Engineering and Mathematics (STEM) education among the participants. FECT projects were capitalized on for this work.

Students who participated at the STEM workshop at the Huvadho School, Gaafu Dhaalu Atoll in Southern Maldives.

CLIMATE AND ENVIRONMENTAL OBSERVING SYSTEMS

FECT has set up five weather stations, one soil moisture station, one air pollution monitoring station in Southern and Central Maldives and these data are accessible online.



Certificate of Appreciation from the Gaafu Dhaalu Atoll Education Centre, Thinadhoo, Maldives.

SERVICES FOR COMOROS

FECT undertook climate and adaptation related work in Comoros at the invitation of the Hairu Group, and the Ministry of Fisheries in Comoros. Consequently, we focused on setting up available weather predictions, development of customized predictions and the translation of these for cyclone, high wind speed, heavy rain and inundation forecasting, to provide Hydro Meteorological monitoring and prediction for Comoros, and Weather and Hazard outlooks for fishing operations. The work has been supported by personnel in departments in charge of meteorology, agriculture, fisheries, environment, surveys, census, water resources, energy, disaster management and the University of Comoros. We helped set up and register non-profit L'Fondation pour Environment, Climate et Technologie (FECT-Afrique) in Comoros.



Fisheries Training Workshop where Dr. L. Zubair contributed at a meeting hosted by the Hairu Group in Moroni, Comoros.



L. Zubair is seen with local partners on a visit to a farm in Grand Comoros

HYDRO METEOROLOGICAL MONITORING AND PREDICTION FOR COMOROS

FECT has set up a web-based hydro-meteorological advisory portal for the Comoros. This report is prepared by Foundation for Environment, Climate and Technology, and Columbia University.

SERVICES FOR ZANZIBAR

Building on our two decades of research in Indian Ocean islands, we started research and development in climate and environmental analysis, computation, monitoring and prediction technologies in Zanzibar in 2018. Our work is oriented towards developing useable scientific and technological information for risk management in water resources, disasters, agriculture, energy, environment and public health. We collaborate with government institution, research institutes and universities. The work is in consultation of personnel's in industries, fisheries, environment, and disaster management and Universities and Research Institutes. Our primary partner is the Ministry of Industries and the Zanzibari Fisheries Agencies.

CLIMATE MONITORING AND PREDICTIONS FOR ZANZIBAR

We have customized a web tool to obtain rainfall and wind vectors history data over regions in the Zanzibar. We shall compare these with ground observations.

SERVICES FOR CHAGOS

We have developed an information portal for the Chagos Islands and developed a proposal to assess sea level rise across the Indian Ocean capitalizing on.

CONTRIBUTORS IN MALDIVES

Health Protection Authority (HPA): Nishan Ahmed
 FECT-MV: Aisath Afaaf
 LaMer (Pvt) Ltd.: S. Sattar, I. Abid
 Maldives Meteorological Service (MMS): Dr. Zahid, Mr. Abdulla Wahid.
 Maldives National University (MNU): Dr. Shazla Mohamed, Majeeda Mohamed, Mohamed Rasheed
 Marine Research Centre (MRC): S. Naeem
 Ministry of Environment: Ali Shareef
 Small Island Research Group/Centre (SIRG/SIRC): Aishath Abdulla, Ali Zuhair, Azim Musthag, H. Zahir, Shahaama Sattar
 Renewable Energy Maldives (REM): Hudha Ahmed
 USAID: Nihani Riza

CONTRIBUTORS AT FECT

Past Contributors

Benno Blumenthal
 Paul Roundy
 Mohamed Rasheed
 Tristan Graham

Recent FECT-SL Staff

Lareef Zubair
 Ruchira Lokuhetti
 Fathima Shakira
 Tuan Hadgie
 Chayana Gunathilake
 Tharani Kailaivasan
 P. Wickramagamage
 Ashara Nijamdeen
 Rimza Zacky
 Rushdha Salih
 Banuka Wijerathne

INTERNATIONAL CONTRIBUTORS

Michael Bell
 Upmanu Lall
 John Del Corral
 Bradfield Lyon
 Shaky Sherpas
 Adam Sobel
 Lareef Zubair
 Joaquin Goes

WEB AND SOCIAL MEDIA

Web: www.tropicalclimate.org/maldives
 Blog: www.fectmv.blogspot.com
 Email: fectmv@gmail.com
 Twitter: @fectmv
 Facebook: www.facebook.com/fectmv

ABOUT FECT

Vision

Our vision is to sustain FECT as a center of excellence in climate, environmental, information technologies and related areas where state of the art research is pursued; technological capability is advanced and disseminated and where all of this is combined to execute socially valued projects

Mission

To sustain a think tank and center of excellence in climate, environment and information technologies with quality research to address societal concerns and ecological protection.

OUR CONTRIBUTION

We have Undertaken climate adaptation projects, trained personnel in Maldives. FECT contributes to climate, hydrology, adaptation, information technology, social sciences and engineering for sustainable development. Our charter requires us to work towards societal welfare and environmental sustainability without private profit.

INSTITUTIONAL PROFILE

To sustain our advances, we instituted the Foundation for Environment, Climate and Technology (FECT) as a non-profit company in 2003 in Sri Lanka. Although, we have been working in Maldives since 2009, we were able to register as an NGO in August 2018.

Company Name: Foundation for Environment, Climate and Technology
 Registration No.: CR/48/2018
 Date of Incorporation: August, 2018
 Office Bearers: President- Ms. Hudha Ahmed
 Vice President: Dr. Lareef Zubair
 Secretary: Ms. Aishath Afaaf
 Treasurer: Dr. Mizna Mohamed
 Assistant Treasurer: Mrs. Rimza Zacky
 Assistant Secretary: Mr. Tuan Hadgie

CONTACTS

In Maldives:

Foundation for Environment Climate & Technology,
 M. Sunny Lodge 1, Muniya Magu, Male 20336, Maldives.
E-mail: fectmv@gmail.com **Phone:** +960 7788010
 Ms. Hudha Ahmed: **Phone:** (960) 3309882
E-mail: hudha.ahmed@gmail.com
 Dr. Lareef Zubair: **Phone:** (960) 7867754
E-mail: lareefzubair@gmail.com

FOUNDATION FOR ENVIRONMENT CLIMATE AND TECHNOLOGY MALDIVES



Climate Services



Climate Adaptation & Environment



Education & Training

PROJECTS

STEM Education and Capacity Building in Southern Maldives (2018-2019)

We are supporting Science, Technology, Engineering, and Mathematics (STEM) learning in the small island schools in Southern Maldives. Scientific and weather instruments were provided to the students. A portal is being developed to provide access to students to resources at SIRC and FECT.



Website: www.climate.lk/stem-education
Sponsor: US National Academy of Sciences

Can Drought and Flood Hazards Be Skillfully and Robustly Assessed at Fine Spatial Resolution in Maldives and Sri Lanka? (2015-2018)

Drought and flood hazard risks are assessed using climate, terrestrial and societal information. Climate and disaster data were compiled. Weekly, monthly and annual digest of climate diagnosis, monitoring and predictions were provided. Weather instruments were setup and the data from these are used for real time monitoring. Information on our work on disasters is at www.disaster.mv



Project site: www.climate.lk/hazards_climate
Sponsor: US National Academy of Sciences, USAID.

Climate Change and Drought Monitoring in Maldives and Sri Lanka (2014-2017)

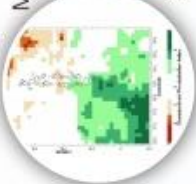
Scientists from FECT, MNU, Columbia University worked with others in Universities, Water Supply and Meteorological Services to develop monitoring and predictive tools for drought risk and to address a riddle in climate change projections which predict a wetter climate although what has been experienced is sustained drying. A portal on drought was developed.



Portal: www.tropicalclimate.org/maldives/drought
Sponsor: US National Academy of Sciences, USAID.

Satellite Rainfall Monitoring Tool (2009-2011)

Michael Bell, John De Corral, Shaky Sherpa and Lareef Zubair at Columbia University and FECT have developed a tool to estimate rainfall with 10/25 km grids. These compare well with ground observations from MMS.



Climate Bulletin for Maldives (2011 Onwards)

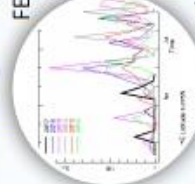
IRI produces climate predictions 3-6 months ahead – we are improving the coverage for the Maldives, improving downscaling and undertaking skill analysis. Our predictions are reported monthly via our monthly climate report of which a thumbnail is at left.



Website: www.fectmv.blogspot.com

Climatological Analysis (2010-2011)

FECT, Columbia University and the MMS undertook climate analysis from ground and satellite observations. Differences in climate across the Maldives were quantified. A research paper on El Nino impacts on Maldives has been drafted.



Masters in Sustainable Development Practice at University of Peradeniya (2010 onwards)

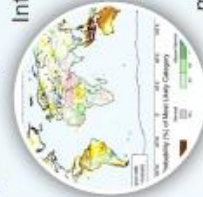
This program focuses on Sri Lanka and Maldives. FECT supports collaboration with Maldives through curriculum developments, research support, and placements for Maldivian students at the University of Peradeniya. This program is supported by Mac Arthur Foundation after a global proposal competition for which Maldives Ministry of Environment supported the University of Peradeniya's and FECT's proposal. MDP interns undertook water scarcity analysis and energy and water studies with the support of MWSC and REM. A Maldivian Aisath Afaaf has enrolled for MDP following our encouragement.



Website: <http://tropicalclimate.org/mdp>

Intra Seasonal Climate Predictions for Maldives (2012-2015)

Intra Seasonal rainfall prediction system is being developed in collaboration with SUNY, Columbia University, MMS supported by the US National Academy of Sciences. Resources from the DYNAMO project are being made available by Dr. Adam Sobel of Columbia University.



Project site: www.climate.lk/water_climate

Sponsor: US National Academy of Sciences, USAID

Planning for Capacity Development in Climate (2009-2011)

This collaboration with the Ministry of Environment produced a detailed road map for Climate related research for the Maldives. At the request of Minister M. Aslam.

Sponsor: International Research Institute, FECT

COLLABORATIONS AND CONSULTATION

Maldivian Institutions

Small Island Research Group/Center (SIRG/SIRC)
Maldivian National University (MNU)
Maldivian Meteorological Service (MMS)
Ministry of Environment (ME)
Ministry of Fisheries and Agriculture
Disaster Management Centre (DMC)
Renewable Energy Maldives (REM)
LaMer Pvt Ltd (LaMer)
UNDP Maldives (UNDP)
Marine Resources Center (MRC)

International Institutions

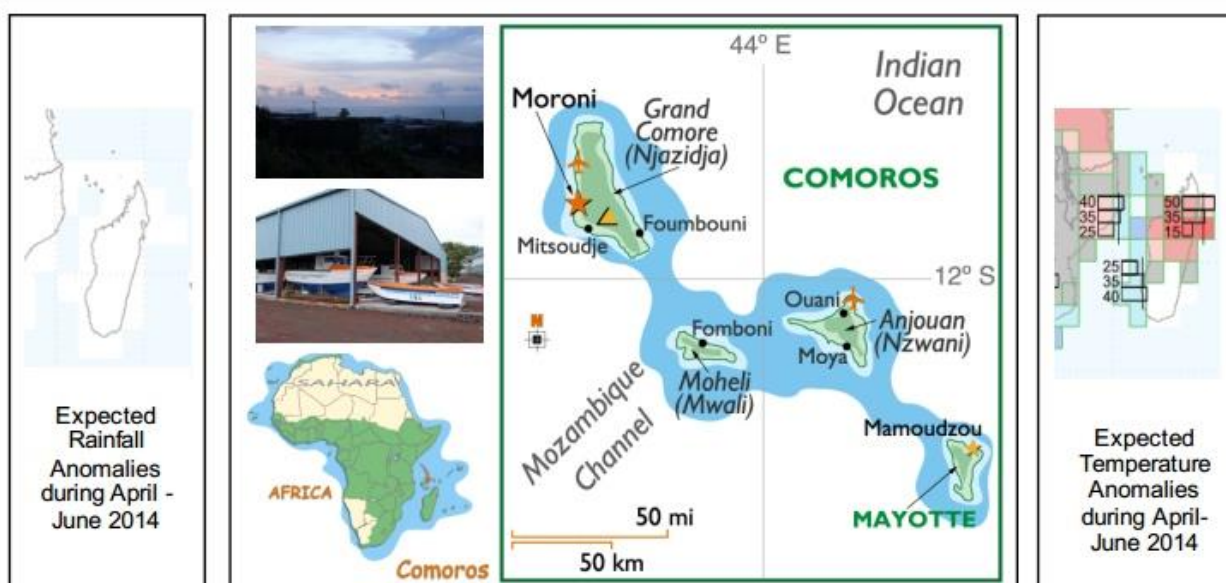
Columbia University Water Center (CUWC)
Lamont Doherty Earth Observatory (LDEO)
International Research Institute for Climate and Society (IRI)
University of Peradeniya, Sri Lanka (UoP)

Foundation for Environment, Climate and Technology (FECT – Afrique)

Collaborators: Foundation for Environment, Climate and Technology, New York and Sri Lanka, National Fisheries Company, Comoros and Columbia University, New York, USA

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

Introduction: Climate and its change pose compelling challenges for Comoros as for the rest of Africa. In the view of many in the government, the capacity to undertake climate and adaptation related work should be enhanced. The Foundation for Environment, Climate and Technology (FECT) grew out of the two decade-long collaboration between Sri Lanka institutions and Columbia University. FECT is collaborating with Comorian agencies in undertaking research in Comoros and the Fisheries project. This flyer contains the timelines of events, the work areas that we are initiating, partners that we have started to work with and contact details. We have developed a website to share information at (www.tropicalclimate.org/comoros/). We have registered FECT-Afrique as a Non-Governmental Organization as of November 29, 2014 with the Government of Comoros as “Fondation pour l’Environnement, le Climate et al Technologies”.



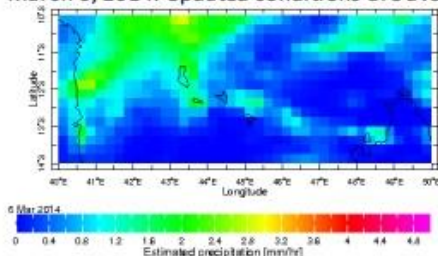
Timeline

- January 2014: Invitation from Ministry of Fisheries and Partners to Visit Comoros
- February 2014: Visit by Lareef Zubair for meetings with
 - State Agencies for Agriculture, Water, Disaster Management
 - State Agencies for Census and Statistics, Topography (Survey) and Meteorology
 - Head and Deputies of Hairu Fisheries Management, Hairu Engineering Consultancy,
 - Master Fisherman from 20 Fishing Villages, Deputy Minister of Fisheries,
 - Fisheries Craft Manufacturing Complex and Fisheries Training School of Hairu Fisheries.
 - Community Centre for Hahaya Village
 - Chef de Department de Geographie, Universite do Comoros
- February 2014
 - Visit to Boat Manufacturing Complex in Oluvil Harbour.
- March 2014
 - Communication with Comorian Agencies
- November 2014: FECT-Afrique is registered as a non-profit organization
- January 2015: FECT Portal for Comoros Established
- Mary 2015: Flyers in French and English Developed
- Since 2016: Climate Analysis Projects undertaken (see overleaf)

Ongoing Projects (see portal for details)

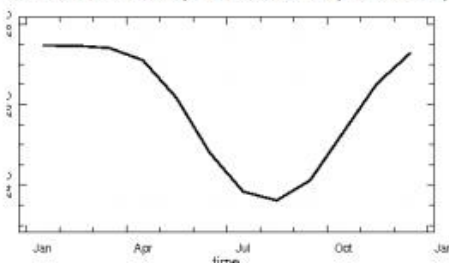
■ Satellite Rainfall Monitoring Tool

We have customized a web tool to obtain 10 years of rainfall history over every 100/250 km regions in the Comoros. See observations for March 6, 2014. Updated conditions are available in the portal.



■ Climatological Analysis

In Collaboration with the Comorian Meteorological Service, and Université de Comoros and others, we investigated the spatial variability of rainfall and factors that influence the Seasonal to Inter-Annual Variability. Predictability is already evident.



Mean Temperature for Moroni by Month – ranges from 23 -28 °C

■ Climate Predictions for Comoros

Predictions of climate for Comoros is available from multiple sources and we review available predictions for skill.

■ Climate Advisory for Comoros

We have developed automated tools for assembling monitored and predicted climate. www.tropicalclimate.org/comoros/Online_2.html

■ Weather and Hazard Outlooks for Fishing Operations

This collaboration focuses on setting up available weather predictions, development of customized predictions and the translation of these for cyclone, high wind speed, heavy rain and inundation forecasting.



Cyclone track the South-West Indian Ocean 1980-2005 – Courtesy: Wikipedia.

■ Fisheries Outlooks (planned)

There is potential for use of remote sensing and oceanic model output for fisheries. This work is based on tying together fisheries information and environmental information.

■ Climate Impacts on Agriculture (ongoing)

Crop yield histories have been obtained for key crops such as Coconut, Vanilla and Banana's and a analysis is being conducted.

Collaborations and Consultations

- National Agency for Civil Aviation and Meteorology, (ANACM)
- Institut National de Recherche pour l'Agriculture, le Pêche et l'Environnement (l'INRAPE)
- Institut National De Statistique, de Etudes Economiques et Démographiques (INSEED)
- Service Topographique (TOPO)
- Direction de l'Energie et des Ressources en Eau (DERE)
- Université de Comoros,
- [Hairu Engineering Consultancy](#) (HEC)

Directors:

Lareef Zubair
Rukshan Malewana

Members in Comoros:

A.A. Chamsoudine, A.M. Goulam,

Consultations in Comoros:

Mme Mariama Antoy Ben Bacar (INRAPE),
Monsieur Asnaoui Mohadji (INRAPE)
Monsieur Mahdy Youssouf (INSEED)
Monsieur Ahmed Djoumoi (INSEED)
Monsieur Ismail Oumouri (TOPO)
Dr. Ibrahim Mohamed (Université)
Dr. Ibrahim Ahmed Kassim (DERE)
Dr. Said Hassane (Ministry of Education)

Contributors at FECT:

Ashara Nijamdeen, Tuan Hadgie, Rimza Zacky,
Fathima Shakira, Chayana Gunatillake, Piusani Ellegala, Tharani Kailavasan

Further Information

Website:

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

Email: fectkm@gmail.com

Twitter: @fectlk

Contact in Comoros

– Ali Abderemane Chamsoudine, Comoros
National Fishing Company Mob: +269 322 68
02 Office: +269 775 10 90 Home: +269 773
66 08 PO Box 6914, Voidjou, Grand
Comoros, Union of Comoros, Email:
mlazemachamou@gmail.com

Contact in USA

– Lareef Zubair, 3603 Broadway, #5F, New
York, NY10031, USA. lareefz@gmail.com, +1-
646-309-0403

Contact in Sri Lanka

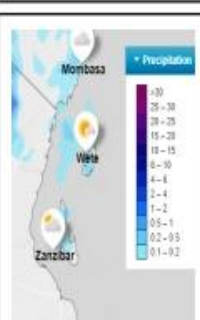
– Rimza Zacky,
FECT, 76/2 Matala Road Akurana, Sri Lanka.
fectsl@gmail.com, +94-2300415

Foundation for Environment, Climate and Technology

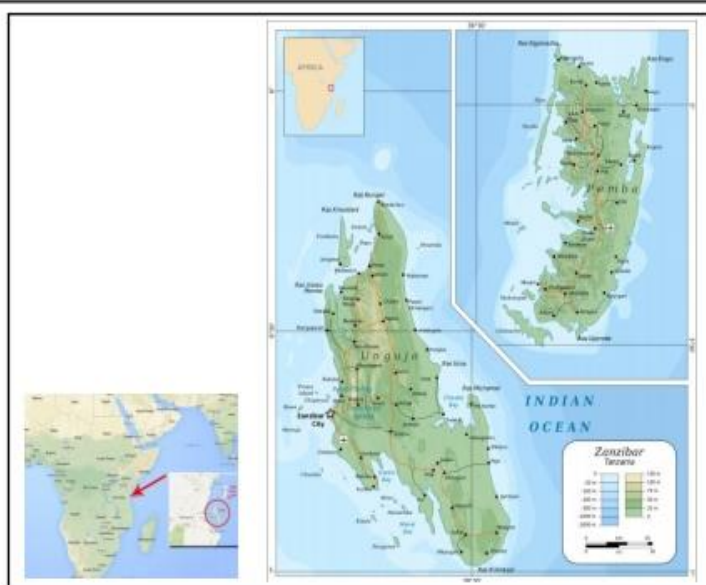
Collaborators: Foundation for Environment, Climate and Technology, New York and Sri Lanka, Hairu Group and Columbia University, New York, USA

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

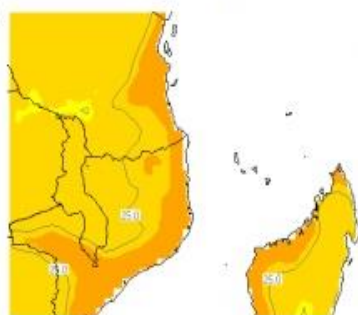
Summary: Building on two decades of research in Indian Ocean islands, we started research and development in climate and environmental analysis, computation, monitoring and prediction technologies in Zanzibar in 2018. Our work is oriented towards developing useable scientific and technological information for risk management in water resources, disasters, agriculture, energy, environment and public health. We collaborate with government institution, research institutes and universities. This flyer contains the time lines of events, the work areas that we are initiating, partners that we have started to work with and contact details. We developed a website and social media to share information. The work is in consultation with personnel's in industries, fisheries, environment, and disaster management and Universities and Research Institutes.



Expected
Rainfall -1
June 2019



Climatology of Zanzibar



Jan - Monthly Average Mean Temperature

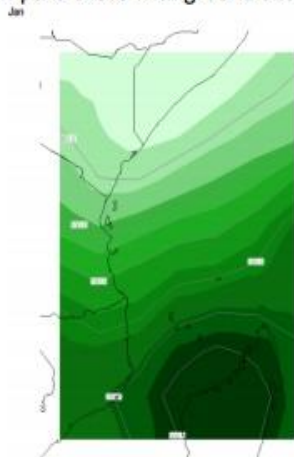
Being situated 60 south of the equator just off the Indian Ocean coast of east Africa, Zanzibar's weather patterns follows that of Tanzania closely. Generally, the main rainy season last during March, April and May. During November and December there's another rainy season

(also known as the 'short rains'). The long dry season, lasts through June, July, August, September and October.

Work Programs

▪ Satellite Rainfall Monitoring Tool

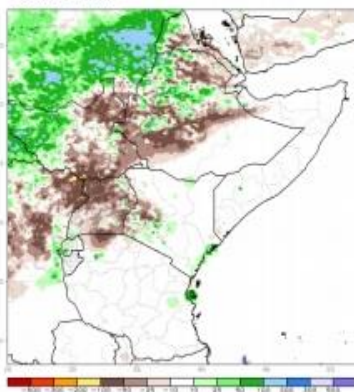
We have customized a web tool to obtain rainfall and wind vectors history data over regions in the Zanzibar. See observations for Jan, 2018. We shall compare these with ground observations.



▪ Climate Predictions for Zanzibar

Predictions of climate for Zanzibar is available from multiple sources such as the NOAA CPC. We shall review available predictions for skill.

ARC2 1-Month Total Rainfall Anomaly (mm)
Period: 01 Jul 2018 - 31 Jul 2018



One-month total rainfall anomaly (mm)
Period: 01 July 2018 – 31 July 2018

Collaborations and Consultations

Zanzibar Institutions

- Ministry of Trade and Industries (MOTI)
- State University of Zanzibar (SUZA)
- Department of Environment (DoE)
- Department of Fisheries (DoF)
- Disaster Management Commission (DMC)
- Department Environment (DoE)
- Institute of Marine Sciences, University of Dar Es Salaam (IMS)
- Tanzania Meteorological Agency (TMA)
- Zanzibar Fisheries Corp (ZAFICO)

International Institutions

- Western Indian Ocean Marine Science Association (WIOMSA)

Further Information

Web: www.tropicalclimate.org/zanzibar/

Email: fectza@gmail.com

Twitter: [@fectza](https://twitter.com/fectza)

Consultations in Zanzibar

MOTI: Hon. Hassan Khamis Qalidh, Hamza

DMC: Mudrik Mussa

DOF: Hashim, Mohd. Ngwali, Shaïd Juma

DOE: Alauï Haji Hija,

ZAFICO: M. Zohor

SUZA: Prof. Rai, Dr. Abdalla I Ali, Dr. Haji Mwevura

IMS: Dr. Narriana Jiddewa

WIOSA: Dr. Julius Samuel

Contributors at FECT

Ashara Nijamdeen, Tuan Hadgie, Rimza

Zacky, Fathima Shakira, Chayana

Gunatillake, Piushani Ellegala, Tharani

Kailavasan, Aqeel Ahmed. Dr. PHD

Kusumawathie, Prof. P Wickramagamage

Contact in Zanzibar

- Hon. Hassan Khamis Qalidh, MP&Deputy Minister for Trade and Industries Zanzibar
+255 778 943 949

Contact in USA

- L. Zubair, 3603 Broadway, #5F, New York, NY10031, USA. lareefz@gmail.com, +1-646-309-0403

Contact in Sri Lanka

- Rimza Zacky, FECT, 76/2 Matale Road Akurana. Sri Lanka. fectsl@gmail.com, +94-81-2300415

The following newspaper articles and reports were published regarding Flooding, Air Pollution from Coal Power Plants, Infectious Diseases, Sethusamudram Canal and Tsunami.

FEATURES

Floods

- Zubair, L., Factors contributing to flooding in Akurana and steps to mitigate the risk. *Newsview*, Akurana, July 2010, [Link](#)
- Zubair, L., ‘The Present and Future of Man-made flooding in Akurana’ *NewsView*, 1 December, 2012.
- Zubair, L. Environmental Management Challenges under Rapid Urbanization: Lessons from Pinga Oya catchment of Sri Lanka’s Mahaweli River. *IPWE*, January 2016.
- Najimuddin, N, L. Zubair. (2017). Analysis of Historical Flooding Incidence in Akurana. *FECT Technical Report* 2017-02.

Infectious Diseases

- Zubair, L., P.H.D. Kusumawathie, Dengue and Chikungunya in Kandy and Akurana, *NewsView*, January 2011.
- Zubair, L., P.H.D. Kusumawathie, Dengue in Kandy and Akurana, *NewsView*, April 2011.
- Salih R., Zubair L., Nijamdeen A., Randiwela M., Kusumawathie P.H.D. Climate Sensitivity of Dengue In Central Sri Lanka. *5th Research Symposium, Central Province*, 2018.

Air Pollution

- Zubair, L., Clouded Sampur, *Ceylon Daily News*, 2016, July 18, Retrieved from [Link](#)
- Zubair, L., Is the air pollution analysis for the Sampur Coal Plant credible? , (2016, July 20), *Financial Times* and *Sri Lanka Guardian*, *Ground Views*. Retrieved from [Link](#)
- Zubair, L., Is the air pollution analysis for the Sampur Coal Plant credible? 2016, July 21, Sri Lanka Guardian, *Ground Views*. Retrieved from [Link](#)
- Zubair, L., Was Air Pollution Analysis for Sampur Coal Plant Botched? 2016, July 24, the *Sunday Leader*. Retrieved from [Link](#)
- Zubair, L. ‘Norochcholai ash contaminates Lanka’s western atmosphere’, *The Sunday Times*, 2019, 10 March. [Link](#)

Sethusamudram Canal

- Zubair, L., Hazards from excavating the Palk Straits for Shipping, *The Island*, August 5 2004.
- Zubair, L. ‘Sethusamudaram Canal: Sri Lanka and Tamil Nadu at risk’, *Daily Mirror*, 1 August, 2005.
- Zubair, L. ‘Facing risks in Sri Lanka from the Indian Canal’, *Daily Mirror*, 5 August, 2005.
- Zubair, L. ‘Sethusamudaram Canal: Sri Lanka and Tamil Nadu at risk’, *The Island*, 5 October, 2005. [Link](#)

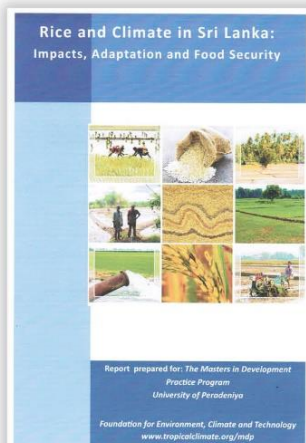
Tsunami

- Science, Disaster Management and the Tsunami in Sri Lanka, International Centre for Theoretical Physics, Trieste, Italy, *ICTP webcast*, March 2005.
- The geography of vulnerability and destruction, *Lines Magazine*, February 2005.
- Six Months On – An Editorial from the GeoLanka/RecoverLanka administrators, *The Island*, August 05, 2005.
- The Tsunami, Science and Disaster Management, *The Island*, January 27 2005.

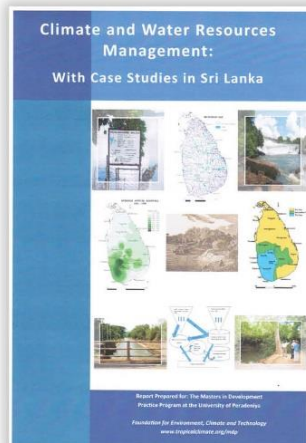
Recent Media Citations of FECT

- Dominique Mosbergen, 'Sri Lanka Is Suffering Its Worst Drought in 40 Years'. *Huffington Post*, 25 January, 2017.
- Dimuthu Attanayake and Vimukthi Fernando, 'Climate change comes home to Sri Lankans'. The *Sunday Observer*, 14 January, 2018.
- Namini Wijedasa, 'Climate scientist urges Government to study risks of cloud seeding', The *Sunday Times*, 3 February, 2019.
- Namini Wijedasa, 'Artificial rain: Contradictory data; experiment suspended', *The Sunday Times*, 31 March, 2019.
- Alexander Cavaluzzo, 'The Maldives: Paradise Lost?' *Newsweek*, 4 February, 2019.
- Shaadya Ismail, '4 new measuring instruments as air quality drops to breathtaking levels', *The Sunday Times*, 10 November, 2019.

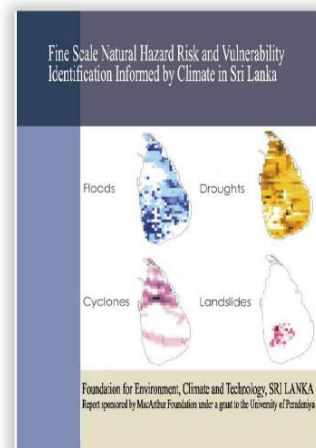
PUBLICATIONS



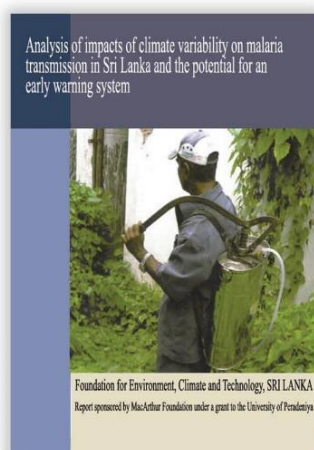
Rice and Climate in Sri Lanka



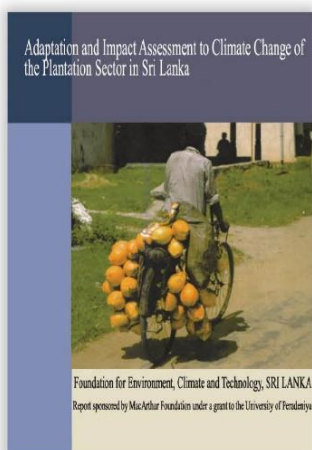
Climate and Water Resource Management



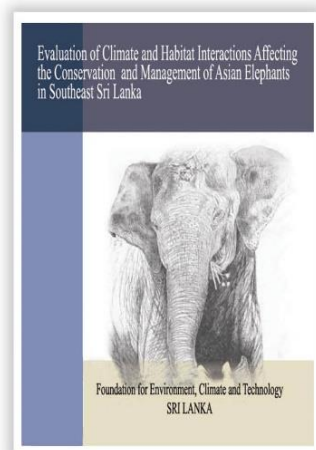
Climate and Natural Disaster Risk



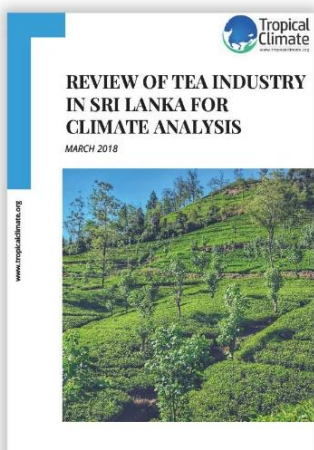
Impacts of Climate Variability on Malaria Transmission



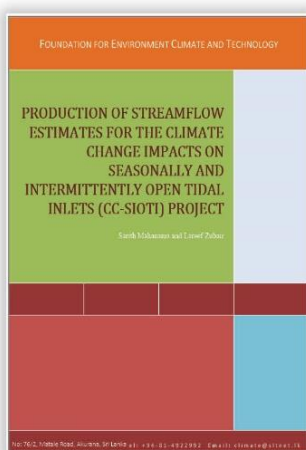
Reference Guide on Climate Research



Climate and Human-Elephant Conflict Project



Review of Tea Industry in Sri Lanka for Climate Analysis



Climate Change Impacts on Open Tidal Inlets



15th Anniversary Report

INTRODUCTION

The Foundation for Environment, Climate and Technology is registered as a non-profit guarantee limited company with the Registrar of Companies of Sri Lanka and as a Voluntary Social Service Organization.

PROFILE

DATE OF INCORPORATION:	31st of December 2003
COMPANY REGISTRATION NUMBER:	N(A) 1148. GA56 (from 31-05-2008)
VSO REGISTRATION NUMBER:	KDS/AKU/5/2/සංඥ/83
COMPANY SECRETARY:	Ralapanawe Associate
COMPANY AUDITORS:	Anzari & Co. Chartered Accountants

PRIMARY OBJECTIVES - (Abbreviated from the FECT Memorandum of Understanding)

1. To map, analyze, monitor, predict and describe environmental parameters along with social and economic information
2. To conduct research on environmental data, diagnostics, prediction
3. To use climate and environmental information, geographic information systems, global positioning systems, remote sensing, ground surveys and studies of socioeconomic conditions
4. To advise, plan, train, educate, recommend and provide technical guidance
5. To develop environmental diagnosis, modelling, impact assessment and adaptation technologies
6. To undertake scientific, educational and other publishing
7. To undertake research, education and advocacy work regarding scientific, technological and socio-economic issues affecting tropical regions.
8. To offer the above services for government, donors, individuals and other parties

NON-PROFIT STATUS - (Revise from License provided by the Registrar of Companies in 2003)

The income and property of the company when so ever derived, shall be applied solely towards the promotion of the objects of the company as set forth in this Memorandum of Association, and no portion thereof shall be paid to or transferred directly or indirectly, by way of dividend, bonus or otherwise howsoever by way of profit, to the members of the company.

CHARITABLE ORGANIZATION - (License provided by the Registrar of Companies)

The trustee or trustees of a trust, or corporation or an unincorporated body of persons established for a charitable purpose only or engaged solely in carrying out a charitable purpose – see back cover.

Summary of FECT projects are provided in – English, Sinhala and Tamil.



FOUNDATION FOR ENVIRONMENT CLIMATE AND TECHNOLOGY

About FECT

Vision

To sustain as a think-tank and center of excellence in climate, environmental and information technologies and related areas with quality research to support sustainable development and advancement of technological capacity for societal welfare.

Our Contribution

We have :

- Undertaken Climate & Environmental research
- Implemented climate adaptation projects
- Developed infrastructure for research
- Trained over two score of personnel since 1997

To sustain these advances we instituted the Foundation for Environment, Climate and Technology (FECT) as a non-profit company in 2003. FECT contributes to climate, hydrology, adaptation, information technology, social sciences and engineering for sustainable development. Our charter requires us to work towards societal welfare without private profit.

Institutional Profile

Company Name	: Foundation for Environment, Climate and Technology
Registration No	: N(A)1148 & GA 56 (from 2008)
Date of Incorporation	: 31st December, 2003
Company Secretary	: Ralapanawe Associates
Auditor	: Anzari & Company
Bankers	: Peoples Bank & Hatton National

Web and Social Media

Websites	: http://www.climate.lk : http://www.tropicalclimate.org
Facebook	: http://facebook.com/fectsl
Twitter	: http://twitter.com/fectlk
wordpress	: http://srilankaclimate.wordpress.com
bloger	: http://fectlk.blogspot.com

Contacts

Foundation for Environment Climate & Technology,
76/2 Matala Road Akurana, KY 20850, Sri Lanka.
Phone: +94-81-2376746, +94-81-2300415
E-mail: info@tropicalclimate.org & fectsl@gmail.com



Climate Services

Climate Adaptation & Environment

Education & Training

Ongoing Projects

Can Drought, Flood and Landslide Hazard be Skillfully Assessed at Fine Spatial Resolution from Model Predicted Data in Sri Lanka and the Maldives? (2015–2018)



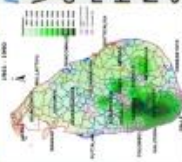
Develop a hazard analysis framework combining multiple indicators to estimate the probability of drought and floods. This work builds on hazards, climate and land surface modeling, and disasters. Sponsored by the US National Academy of Sciences, USAID.

Impacts of Climate Variability and Change on Tea Plantations in the Hill Country



This project was designed and proposed by the scientist from Tropical Climate and Foundation for Environment, Climate and Technology (FECT), together with our partners at the University of Peradeniya, to assess the impacts of climate on the Tea Plantation Systems in Sri Lanka. The project focuses primarily on the impacts on tea production, yield and quality.

Climate Information for Mahaweli Water Resources Management (2000–4, 2008-to date)



We developed tools to generate climate information for water resources management. FECT was providing weekly hydrometeorological advisories to the Mahaweli Authority (MASL) since 2008. Sponsor: IRI, Mahaweli Authority, IFS (Sweden).

Completed Projects

Drought Monitoring and Climate Change Assessment for Sri Lanka and Maldives. (2014–17)



Develop tools to monitor Drought Risk and address the shortcomings in climate change projections at moderate time scales (up to 20 years) for the South-Asian region in collaboration with the Maldives National University Sponsored by the US National Academy of Sciences, USAID.

South Asia Strategy Development for CCAFS and Toolkit for crop yield forecasting (2010–15)



We contributed to the South Asian Strategy Development CCAFS and assisted the Sri Lanka Department of Agriculture to develop a proposal for crop yield forecasting. Sponsored by CGIAR Climate Change, Agriculture and Food Security Program (CCAFS).

Intra-Seasonal Climate Predictions for Sri Lanka and the Maldives for Water Resources Management (2012–2015)



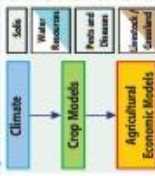
We diagnosed the variability of climate over Sri Lanka from a few days to a month while providing a weekly climate bulletin to National Water Managers. As pilot studies, we diagnosed causes of flooding in the Pinga-Oya catchment of the Mahaweli River in Sri Lanka and drought in the Greater Male region of the Maldives. We worked on climate diagnosis and evaluated the use of Intra-Seasonal and Seasonal Predictions. Sponsored by the US National Academy of Sciences, USAID.

Masters in Development Practice, University of Peradeniya (2010–16)



FECT assisted the University of Peradeniya to develop a post-graduate course focusing on sustainable development. We support curriculum developments for interns. We undertook research and training at the Maldives National University. Sponsored by the MacArthur Foundation, USA.

Modelling the Impacts of Climate Change on Rice Agricultural Systems and Food Security in Sri Lanka (2012–2014)



We undertook climate change, crop and economic modeling of the impacts of climate change on agricultural systems working across Sri Lanka with a focus on the Kurunegala District. This work was in partnership with the Universities of Peradeniya, Ruhuna and Rajarata, Department of Agriculture and Sugarcane Research Institute. Sponsored by the Agriculture Model Inter-comparison and Improvement Program (AgMIP).

Dengue Risk and its Relationship to Climate in Sri Lanka (2010–2011)



We assessed the regional and seasonal variation of dengue risk in Sri Lanka and its relationship to climate. The findings were followed up to development of a proposal. Sponsored by WHO - SEARO.

Climate Variability and Rice Production (2000, 2010)



We investigated the impacts of El Nino Southern Oscillation (ENSO) events on rice production, area and yield by district in Sri Lanka. Sponsor: SEARCA—FAO

Climate Change Impacts on Seasonally and Intermittently Open Tidal Inlets (2009)



We collaborated in characterizing the seasonal and regional variation of stream flow under climate change forcing for Sri Lanka from global climate change. Sponsored by UNESCO - IHE.

Assessing Drought and Enabling Adaptation through Rainwater Harvesting (2007–2008)



The project undertook scarcity assessments and climate analysis to support Rain Water Harvesting policy, design and operations in Hanguranketa. Sponsored by the Prevention Consortium.

Climate Impacts on Malaria Transmission and Malaria Risk Mapping for Sri Lanka (2003–08)



Working with the International Research Institute for Climate and Society (IRI), the Anti Malaria Campaign, and International Water Management Institute (IWMI) we characterized the climate relationships to malaria risk at sub-district scales. Funded by NOAA, Office of Global Programs.

Climate and Natural Disaster Risk (2002–05)



The project was to identify the risks posed by multiple natural hazards such as droughts, floods, landslides and cyclones in Sri Lanka. Sponsored by the World Bank through the Earth Institute.

Impacts of Climate Change on Tea and Coconut Plantations and Adaptation (2002–05)



With TRI and CRI, the project characterized climate change and assessed its impacts on tea & coconut plantations. The project involved IRI, Department of Meteorology, Coconut Research Institute and Tea Research Institute. Sponsored by the System for Analysis, Research and Training & Sri Lanka Association for Advancement of Science.

Climate and Human-Elephant Conflict (2001–04)



The influence on the seasonal and decadal variation of climate on human elephant conflict was identified by the project. This was assisted by Environment, Forestry and Conservation Division of the Mahaweli Authority and the Department of Wildlife Conservation, Sponsored by IRI and the Earth Institute.



FOUNDATION FOR ENVIRONMENT CLIMATE AND TECHNOLOGY



දේශගුණික සේවා



දේශගුණික අනුවර්තන සහ පරිසරය



අධ්‍යාපනය සහ පුහුණුව

අප ගැන

මෙහෙවර

සමාජ අවධානය හා පාරිසරික ආරක්ෂාව සඳහා දේශගුණ, පරිසර හා තොරතුරු තාක්ෂණය යොදා ගනිමින් ගුණාත්මක පර්යේෂණ සමාජයට දායාද කිරීම.

අපගේ දායකත්වයන්

අප විසින්,

- තාලගුණය සහ පාරිසරික පර්යේෂණ සිදුකිරීම.
- දේශගුණික අනුවර්තන ව්‍යාපෘති ක්‍රියාත්මක කිරීම.
- පර්යේෂණ සඳහා යටිතල පහසුකම් වැඩි දියුණු කිරීම.
- 1997 සිට කාර්ය මණ්ඩලයේ 55ට වැඩි තරුණ ශ්‍රමිකයන් පිරිසක් පුහුණු කිරීම.

ඉහත සන්නායක සිදු කිරීම සඳහා අප ආයතනය පරිසර, දේශගුණය සහ තාක්ෂණ පදනම (FECT) ලෙස 2003 දී ලාභ නොලබන ආයතනයක් ලෙස ලියාපදිංචි කරන ලදී. FECT අපි දේශගුණය, පරිසර, අනුගතවීම, තොරතුරු තාක්ෂණය, සමාජ විද්‍යාව හා ඉංජිනේරු යන අංශයන් තුළින් නිර්සාර සංවර්ධනයට දායක වෙමු. අපගේ ප්‍රතිපත්තිය වන්නේ කිසිදු ලාභයක් නොලබා සමාජ සුභසාධනය සඳහා කටයුතු කිරීමයි.

ආයතනික පැතිකඩ

සමාගම් නාමය : පරිසර, දේශගුණය හා තාක්ෂණ පදනම
ලියාපදිංචි අංක : N(A)1148 & GA 56 (2008 සිට)
සංස්ථාගත කිරීම් දිනය : දෙසැම්බර් 31, 2003
සමාගම් ලේකම් : රළුපතාව ඇමාසිරිපිස්
විගණකාධිපති : අත්සාරී සහ සමාගම
බැංකුකරුවන් : මහජන බැංකුව සහ හාවේ තාපනල් බැංකුව

වෙබ් අඩවි හා සමාජ මාධ්‍ය

Websites : <http://www.climate.lk>
<http://www.tropicalclimate.org>
Facebook : <http://facebook.com/fectsl>
Twitter : <http://twitter.com/fectlk>
Wordpress : <http://srilankaclimate.wordpress.com>
Blogger : <http://fectlk.blogspot.com>

සබ්දතා

පාරිසරික දේශගුණය හා තාක්ෂණය සඳහා පදනම,
76/2 මහලේ පාර අතුරු, KY 20850, ශ්‍රී ලංකාව.
දුරකථන: + 94-81-2376746, + 94-81-2300415
විද්‍යුත් තැපෑල : info@tropicalclimate.org
: fectsl@gmail.com



දැනට ක්‍රියාත්මක ව්‍යාපෘති

ශ්‍රී ලංකාව සහ මාලදිවයින ආශ්‍රිතව වන නිශංශාංශවතුර සහ කාශායාම් ආපදා දත්ත සිදුම් ඇගයීමට ලක් කර අභ්‍යාවකි කිව හැකිද?



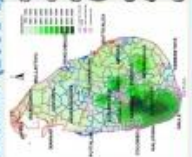
නිශංශා හා ගංවතුර බලපෑම් ඇස්තමේන්තු කිරීම සඳහා අවදානම් විශ්ලේෂණ රාමුව සංවර්ධනය කිරීම සහ මෙම කාලගුණික හා දේශගුණික වෙනස්වීම් මත සිදුවන්නා වූ ක්‍රියාවලීන් සිතියම් ගත කිරීම. මේ සඳහා ඇමරිකානු ජාතික විද්‍යා ඇකඩමිය මගින් අරමුදල් සපයනු ලැබුණි.

සාදනාරයේ හේ වගාවන්ට දේශගුණික විචලනයාවයේ සහ වෙනස්වීම් වල බලපෑම.



ශ්‍රී ලංකාවේ හේ වැව්වලට වැඩි පද්ධති මත දේශගුණය බලපෑම් තත්ත්වයේ කිරීම සඳහා පෝරාදෙණිය විශ්වවිද්‍යාලයේ අපගේ හවුල්කරුවන් සමඟ Tropical Climate, ජාත්‍යන්තර, දේශගුණික හා තාක්ෂණික පදනම (FECT), විසින් මෙම ව්‍යාපෘතිය සැලසුම් කරන ලදී. හේ නිෂ්පාදනයේ, අපවර්තන හා ගුණාත්මකභාවය කෙරෙහි ඇති බලපෑම් සඳහා මූලික වශයෙන් අවධානය යොමු කරයි.

මහවැලි ජල සම්පත් කළමනාකරණය සඳහා දේශගුණික තොරතුරු සැපයීම. (2004-4, 2008-4 දක්වා)



ජල සම්පත් කළමනාකරණය සඳහා දේශගුණික තොරතුරු උත්පාදනය කිරීමට මෙවලම් ගොඩනැගීම. සහ FECT මගින් 2008 සිට මහවැලි අධිකාරිය (MASL) වෙත සහිතව පල-කාලගුණ-විද්‍යාත්මක උපකරණ සේවා සැපයීම. මේ සඳහා IRI, මහවැලි අධිකාරිය, IFS (ස්වර්ණය) මගින් අරමුදල් සපයනු ලැබුණි.

නිම කරන ලද ව්‍යාපෘති

ශ්‍රී ලංකාව සහ මාලදිවයින සඳහා නිශංශා අවිනිශ්චිත හා දේශගුණික වෙනස්වීම් තත්ත්වයේ කිරීම. (2014-17)



නිශංශා අවදානම් අධීක්ෂණය කිරීමට හා අනුමැති ආසියානු කලාපයේ නිෂ්චිත කාල පරාසයකදී (අප්‍රේල් 20 දක්වා) දේශගුණික විපර්යාස නිමකරගත් පවතින අඩුපාඩු සඳහා මාලදිවයිනේ ජාතික විශ්වවිද්‍යාලය සමඟ එක්ව මෙවලම් ගොඩනැගීම. මේ සඳහා ඇමරිකානු ජාතික විද්‍යා ඇකඩමිය මගින් අරමුදල් සපයනු ලැබුණි.

මෙම ආකෘති නිර්මාණය.



බොහෝ අපවර්තන ප්‍රක්ෂේපණය සඳහා කේන්ද්‍රාත්මක සහය කිරීම සඳහා අනුමැති ආසියාතික උපාය මාර්ගික සංවර්ධන කේ.සී.එල්.එස් ආයතනයට දායක වූ අතර, ශ්‍රී ලංකා කෘෂිකර්ම දෙපාර්තමේන්තුව ද සහාය විය. මේ සඳහා CGIAR දේශගුණික වෙනස්කම්, කෘෂිකර්ම හා ආහාර සුරක්ෂිතභාවය වැඩසටහන (CCAFS) මගින් අනුග්‍රහය ලබා දෙනු ලැබුණි.

ජල සම්පත් කළමනාකරණය සඳහා ශ්‍රී ලංකාව හා මාලදිවයින ආශ්‍රිතව කරන සිදුම් දේශගුණික අභ්‍යාවකි සැපයීම.



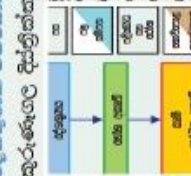
මෙමගින් ශ්‍රී ලංකාවේ ඉහළ දේශගුණික විචල්‍ය ස්වභාවය දිගු කාලීනව සිට මෙයට දක්වා නිර්ණය කොට අදාළ දේශගුණික වාර්තා ජාතික ජල කළමනාකරුවන්ට ලබා දේ. ප්‍රධාන අධ්‍යයන දෙය ශ්‍රී ලංකාවේ මහවැලි ගඟට අනුබද්ධ පිහිටි මධ්‍යම සහ පළමු පොළොව ආශ්‍රිතව ගංවතුර ඇතිවීම සහ මාලදිවයිනේ "ග්‍රේටර් මාලේ" කලාපයේ නිශංශාව බලපාන හේතූන් අධ්‍යයනය කරන ලදී. අප විසින් දේශගුණික බලපෑම් අනුව කරන අභ්‍යාවකි තත්ත්වයේ, කරන ලදී. මේ සඳහා ඇමරිකානු ජාතික විද්‍යා ඇකඩමිය මගින් අරමුදල් සපයනු ලැබුණි.

නිර්මාණ සංවර්ධනය සිදුකර පමාන උපාය මාර්ගය පෝරාදෙණිය විශ්වවිද්‍යාලය. (2010 -16)



නිර්මාණ සංවර්ධනය සිදුකර පමාන උපාය මාර්ගය පෝරාදෙණිය විශ්වවිද්‍යාලයට සහාය ලබා දුන් අතර ආධුනිකයින් සඳහා වන විෂයමාලා සංවර්ධනය, ඉගැන්වීම, පර්යේෂණයන්ට ද සහාය ලබා දුනි. එසේම ශ්‍රී ලංකාවේ හා මාලදිවයිනේ සම්බන්ධ ව්‍යාපෘති සහ කුසලතා සංවර්ධනය සිදු කරන ලදී. මේ සඳහා මහාආරාම පදනම විසින් අරමුදල් සපයනු ලැබුණි.

ශ්‍රී ලංකාවේ සහ මාලදිවයින සඳහා ආහාර ආරක්ෂාව සිදුකර දේශගුණික විපර්යාස මගින් ඇති වූ බලපෑම නිරූපණය කිරීම.



පුරා කෘෂිකර්මය මත ඇති කරන ලද දේශගුණික විපර්යාස බලපෑම් ආර්ථික ආකෘති නිර්මාණ මගින් හඳුනා ගනු ලැබූ, මෙම කාර්යය පෝරාදෙණිය, රාජගල හා රජපරා විශ්වවිද්‍යාලය, කෘෂිකර්ම දෙපාර්තමේන්තුව හා උත් පර්යේෂණ ආයතනය සමඟ එක්ව සිදු කරන ලදී. මේ සඳහා AgMIP මගින් අරමුදල් සැපයුණි.

ශ්‍රී ලංකාවේ සහ මාලදිවයින සහ දේශගුණික අතර ඇති සම්බන්ධය තත්ත්වයේ කිරීම. (2010-11)



සෘතු වෙනස් වීම අනුව ශ්‍රී ලංකාවේ වෙනම අවදානම හා දේශගුණය අතර ඇති සම්බන්ධය තත්ත්වය සහ අතර මෙම සොයා ගැනීම් කේන්ද්‍රාත්මක දක්වා ගොඩ නගන ලදී. මෙම ව්‍යාපෘතිය සඳහා WHO - SEARO ආයතන විසින් අරමුදල් සපයනු ලැබුණි.

ශ්‍රී ලංකාවේ සහ මාලදිවයින සඳහා නිෂ්පාදනය. (2000, 2010)



ශ්‍රී ලංකාවේ සුප්‍රතික්ෂය විසින් කරනු ලැබූ සහල් නිෂ්පාදනය හා එල්-කිනේ අතර සම්බන්ධතාවය මෙම ව්‍යාපෘතියේදී විශ්ලේෂණය කෙරුණි. SEARCA-FAO මගින් අරමුදල් සපයන ලදී.

උදම් කට්ටනාව මත දේශගුණික වෙනස්වීම් බලපෑම. (2009)



අප විසින් දේශගුණික වෙනස්වීම් යටතේ සිදුවන සෘතුමය සහ කලාපීය රළු ගැලීම් වෙනස්වීම් පැහැදිලි කරනු ලැබුණි. UNESCO-IHE මගින් ව්‍යාපෘතිය සඳහා අරමුදල් සපයනු ලැබුණි.

වැඩි ජලය කළමනාකරණය මගින් ඉදිරි කාලයන්හි දී ඇති විය හැකි නිශංශා තත්ත්වයන් සඳහා පොර සුදානම් වීම. (2007-08)



අප විසින් වැඩි ජලය කළමනාකරණය උදෙසා ජල ගිණය ඇස්තමේන්තු කිරීම හා කාලගුණය විශ්ලේෂණය කිරීමට පියවර ගන්නා ලදී. මෙම ව්‍යාපෘතියට අදාළ සැලසුම් හා නිර්මාණ හඳුරන්කොත දී සිදු කෙරුණි. ProVention මූල්‍ය ආයතනය මගින් අරමුදල් සැපයුණි.

ශ්‍රී ලංකාවේ මාලදිවයින පැතිරුමේ අවධානම් සඳහා දේශගුණික බලපෑම් අවධානය කිරීම. (2003-08)



අප විසින් දේශගුණික වෙනස්වීම් හා මෘදුකීර්ණ අවදානම් අතර සම්බන්ධතාව, මාලදිවයින සංවර්ධන වැඩසටහන, IRI සහ ජාතික ජල කළමනාකරණ ආයතනය සමඟ එක්ව පැහැදිලි කරන ලදී. NOAA මගින් අරමුදල් සපයනු ලැබුණි.

දේශගුණය හා ස්වභාවික විපත් අවධානම්. (2002-05)



මෙම ව්‍යාපෘති මගින් විවිධ ස්වභාවික විපත් (ගංවතුර, නිශංශා, තාපය, කුණාටු) වෙනුවෙන් සිදුවන අවදානම් තත්ව හඳුනා ගන්නා ලදී. මෙයට සංවිධිත අධ්‍යයන ආයතනය හරහා ලෝක බැංකුවට අරමුදල් සපයන ලදී.

දේශගුණික වෙනස්වීම් හේ සහ පොල් වගාවට සිදුවන බලපෑම. (2002-05)



මෙම ව්‍යාපෘතිය මගින් හේ හා පොල් වගාවන් කෙරෙහි දේශගුණික විපර්යාස වල බලපෑම අධ්‍යයනය කෙරුණි. පොල් පර්යේෂණ ආයතනය සහ හේ පර්යේෂණ ආයතනය මගින් මෙම ව්‍යාපෘතිය දිනෙන් කල අතර ඒ සඳහා IRI සහ කාලගුණ විද්‍යා දෙපාර්තමේන්තුව ද දායක විය. මේ සඳහා ශ්‍රී ලංකා විද්‍යා අතිවිද්‍යා සංගමය සහ System for Analysis, Research and Training (START) ආයතනය මගින් අනුග්‍රහය ලබා දුනි.

දේශගුණය හා ඇඳි මිනිස් හදවත. (2001-04)



අප විසින් MASL, EFCD හා DWLC ආයතන වල උපකාරයෙන් දේශගුණය මගින් සිදු වන අලි මිනිස් ගැටුමට සිදු කරන බලපෑම් හඳුනා ගැනුණි. සංවිධිත ආයතනය මෙම ව්‍යාපෘතියට අදාළව අනුග්‍රහය ලබා දුනි.

இந்த நிறுவனத்தைப்பற்றி

நோக்கம்

“காலநிலை, சுற்றுச்சூழல், தகவல் தொழில் நுட்பம் மற்றும் இவை சார்ந்த துறைகளில் நிலையான சிந்தனை களஞ்சியமாகவும் தலைச்சிறந்த நிறுவனமாகவும் செயற்படுவதன் மூலம் தரமான ஆராய்ச்சிகளை மேற்கொண்டு அதன் மூலம், சமூக நலன் கருதி, நிலையான வளர்ச்சிக்கும் தொழில் நுட்ப பரிணாம வளர்ச்சிக்கும் ஆதரவு வழங்குதல்.”

எங்கள் பங்களிப்புகள்

- » காலநிலை மற்றும் சுற்றுச்சூழல் ஆய்வு.
- » காலநிலை தகவல் திட்டங்கள் செயற்படுத்தப்பட்டன
- » ஆராய்ச்சிக்கான உள்கட்டமைப்பு உருவாக்கப்பட்டது
- » 1997 முதல், 40 க்கும் மேற்பட்ட இனம் ஊழியர்களுக்கு பயிற்சி அளிக்கப்பட்டுள்ளது

இந்த திட்டங்களை மேற்கொள்வதற்காக 2003 ஆம் ஆண்டு காலநிலை, சுற்றுச்சூழல் மற்றும் தொழில்நுட்ப நிறுவனம் (FECT) இலாப நோக்கமற்ற சங்கமாக ஆரம்பிக்கப்பட்டது. இந்தநிறுவனம், காலநிலை, நீர்வள இயல், தகவல், தகவல் தொழில் நுட்பம், சமூக விஞ்ஞானம் மற்றும் பொறியியல் ஆகிய துறைகளின் நிலையான வளர்ச்சிக்கு பங்களிக்கின்றது. இந்தநிறுவனம் இலாப நோக்கமின்றி சமூக நலனுக்காக கடமைபுரிகின்றது.

நிறுவன விபரங்கள்

நிறுவனத்தின் பெயர் : காலநிலை, சுற்றுச்சூழல் மற்றும் தொழில்நுட்ப நிறுவனம்
பதிவு எண் : N(A)1148 & GA 56 (2008)
இணைந்த திகதி : டிசம்பர் 31, 2003
நிறுவனத்தின் செயலாளர் : ரவபனாவ கூட்டுத்தாபனம் (Ralanawwa Associates)
கணக்காப்பவாளர் : அன்சாரி மற்றும் நிறுவனம்
வங்கியாளர்கள் : மக்கள் வங்கி, ஓட்டன் நெஷனல் வங்கி

மேலதிக விபரங்களுக்கு

Websites : <http://www.climate.lk>
<http://www.tropicalclimate.org>
Facebook : <http://facebook.com/fectsl>
Twitter : <http://twitter.com/fectlk>
Wordpress : <http://srilankadclimate.wordpress.com>
Blogger : <http://fectlk.blogspot.com>

தொடர்புகளுக்கு

காலநிலை மற்றும் சுற்றுச்சூழல் தொழில்நுட்ப நிறுவனம்,
76/2, மாத்தளை வீதி, அச்சுறையை, KY 20850, Sri Lanka.
தொலைபேசி : +94-81-2376746, +94-81-4922992
மின்னஞ்சல் : info@tropicalclimate.org & fectsl@gmail.com



FOUNDATION FOR ENVIRONMENT CLIMATE AND TECHNOLOGY



காலநிலை
சேவைகள்



காலநிலை
தழுவல்
மற்றும்
சுற்றுச்சூழல்



கல்வி
மற்றும்
பயிற்சி

ACKNOWLEDGEMENTS

Staff: Our ability to maintain competent and dedicated staff has been instrumental in our sustenance amidst various difficulties. The dedication of the staff members to build up FECT is acknowledged. We thank our advisory staff for their key contributions.

Partners: We are grateful for the continuous support provided by the Mahaweli Authority of Sri Lanka including hosting a work space. We are grateful to our collaborators, particularly the Columbia University Water Center, International Research Institute for Climate and Society, Coconut Research Institute, Sugarcane Research Institute, University of Peradeniya, Department of Meteorology, Tea Research Institute, Anti-Malaria Campaign, Department of Agriculture, International Water Management Institute, the Universities of Ruhuna, Moratuwa, Colombo, Rajarata, Sabaragamuwa and The Open University.

In the Maldives, we thank the Maldives Meteorological Service (MMS), Maldives National University (MNU), Renewable Energy Maldives, Land and Marine Environmental Resources Group (Pvt) Ltd (LaMer), Ministry of Health, Ministry of Environment and Energy, Malé Water and Sewerage Company, Dinemore and Small Island Research Centre (SIRC).

We thank collaborators at the, International Foundation for Science, National Oceanic and Atmospheric Administration (NOAA), Food and Agricultural Organization (FAO), World Health Organization South - East Asia Region (WHO SEARO), Ministry of Science and Technology, National Science Foundation (NSF), Mahaweli Authority of Sri Lanka (MASL), MacArthur Foundation, University of Notre Dame, Agriculture Model Intercomparison and Improvement Project (AgMIP), and the University of Colorado.

Administration: The administration of the company has proceeded smoothly through the cooperation among the management and staff. The Annual reports were submitted via our Company Secretary, Ralapanawe Associates, to the Registrar of Companies. Financial Management: Auditors, Anzari and Co., has reported a healthy state of financial management in each of our annual audits since inception.

Credits: Asansa Abeywardane prepared the initial version of the document and Jonathan Frank and Chayana Gunatillake contributed the cover while Lareef Zubair, Ashara Nijamdeen, Fathima Shakira, Tuan Hadgie and Tharani Kailaivasan contributed content.

Other Acknowledgements:

OUR AFFILIATE SCIENTISTS:

Dr. S. Mahanama
Eng. Neil Devadasan,
Eng. A.K Weerasinghe
Prof Ajith Gunaratne
Dr. Vidhura Ralapanawe
Eng. Thilaka Samaratunga
Eng. Mrs. Thameema Hilal
Eng. Badra Nawarathna
University of Peradeniya:
Prof. C.M. Madduma Bandara
Dr. Uditha Ratnayake
Prof. Lakshman Dissanayake
Dr. Champika Bandara
Dr. Rupika Rajakaruna
Dr. D.H.S. Maithripala

Dr. Nalani Hennayake
Dr. Dileni Gunewardena
Dr. Wasantha Athukorala
Dr. Ananda Jayawickrama
Dr. O.G Dayaratne Banda
Dr. S.P Nissanka
Mr. Sampath Deegalla
Dr. Chamila Walgampaya
Dr. Kanthi Perera
Dr. Sachith Abeyesundara
Prof. W.B. Daundesequera
Dr. L. Galagedera
Dr. Shamala Kumar
Dr. Lalitha Dissanayake
Dr. Gemunu Herath

Dr. Hemali Ampitiya

University of Colombo:

Dr. M.T.M. Mahees

Prof. Chandana Jayaratne

University of Ruhuna:

Prof. K.D.N. Weerasinghe

Dr. Champa M. Nawarathna

Rajarata University:

Mr. Janaka Gunaratna

Sri Lanka Open University:

Dr. Nalin Wikramanayake

Dr. S. Aluvihare

Dr. P. Amerasinghe

South-Eastern University

Mr. Farook Nawas

Dr. M. Junaid

University of Jaffna

Dr. M. Manobavan

Mahaweli Authority

Eng. S.R.K. Aruppola

Eng. G.S.S. Jayaweera

Eng. K.N. Wickramaratna

Eng. J.A.S.A. Jayasinghe

Eng. H. Herath Banda

Eng. B.S. Liyanagama

Mr. Dhammika Bandara

K.B. Jayasundera

Mr. Anver Batcha

Mr. R. Seneviratna

NRMS:

S.B. Rajakaruna

A. Amerasekera

IWMI:

Dr. H. Manthrithilake

Coconut Research Institute

Dr. Sarath Peiris

Dr. Neil Fernando

Irrigation Department:

Eng. H.M. Jayatillake

Anti-Malaria Campaign:

H.M. Faizal

G.N.L. Galappaththy

Dr. P.H.D. Kusumawathie

Institute of Fundamental Studies:

Dr. M.C.M. Iqbal

Prof. Gamini Seneviratne

Department of Agriculture:

Dr. R. Punyawardene

Dr. W.M.W. Weerakoon

Mr. Chamila Perera

Sugarcane Research Institute:

Dr. A.P. Keerithipala

Mr. K. Sanmuganathan

Mr. A.L.C. De Silva

Ms. Sandya Ariyawansa

Akurana Pradeshiya Sabaha:

Mr. Isthihar Imadudeen

Ms. Nasliya Shahabdeen

Mr. Rajapakse

Akurana Divisional Secretariat:

Mr. Madhawa Warnakulasooriya

NIBM:

Mr. M. Riham

Ms. Shamalka Uduwella

Ms. Inoka Abeysinghe

Others:

Ms. Tanuja Ariyananda (SLRHF)

Eng. M.J.M.N. Marikkar (LTL Holdings)

Dr. Ananda Mallawathantri (UNDP)

Dr. Gamini Batuwitige (Gemidiriya)

Eng J.M. Samoon (Independent Engineer)

LICENCE BY THE REGISTRAR OF COMPANIES
(PURSUANT TO SECTION 21 OF THE COMPANIES ACT No.17 OF 1982)

Whereas it has been proved to the satisfaction of the
Registrar of Companies that

FOUNDATION FOR ENVIRONMENT CLIMATE AND TECHNOLOGY
an association about to be formed as a limited company
under the Companies Act No.17 of 1982, is to be formed for
the purpose of promoting objects of the nature contemplated
by Section 21 of the said Companies Act and that it is the
intention of the said

FOUNDATION FOR ENVIRONMENT CLIMATE AND TECHNOLOGY
that the income and profits of the association whenever
derived shall be applied solely towards the promotion of
the objects of the association as set forth in the
Memorandum of Association of the said


FOUNDATION FOR ENVIRONMENT CLIMATE AND TECHNOLOGY
and that no portion thereof shall be paid or transferred
directly or indirectly by way of dividend or bonus or
otherwise howsoever by way of profit to the members of
FOUNDATION FOR ENVIRONMENT CLIMATE AND TECHNOLOGY

Now therefore, I **ROHINI DE SILVA WIJESCORIYA** Deputy
Registrar of Companies, in pursuance of the powers vested
in me and in consideration of the provisions and subject to
the conditions contained in the Memorandum of Association
of the said

FOUNDATION FOR ENVIRONMENT CLIMATE AND TECHNOLOGY
submitted by **Seven** members thereof on **30th December 2003**
do by this licence direct

FOUNDATION FOR ENVIRONMENT CLIMATE AND TECHNOLOGY
to be registered as a company with limited liability
without the addition of the word "LIMITED" to its name.

Signed at Colombo this **Thirty First** day of December
Two Thousand Three.


FOR REGISTRAR OF COMPANIES
DEPUTY REGISTRAR OF COMPANIES.



*License from Registration of Companies under Section 21
which refers to charitable and other acuties of public interest.*

Foundation for Environment, Climate & Technology

Web: www.climate.lk
www.tropicalclimate.org

Email: fectsl@gmail.com
info@tropicalclimate.org

Facebook: facebook.com/FECTSL

Telephone: +94 81 230 0415

Twitter: @fectlk and @climatelk

+94 77 720 9950