



CONFERENCE REPORT

THE 7TH INTERNATIONAL CONFERENCE ON CLIMATE CHANGE 2023

“CLIMATE ACTION AND EMERGING CHALLENGES: LAND- AND
OCEAN-BASED SOLUTIONS”

9TH – 10TH FEBRUARY 2023 | COLOMBO, SRI LANKA



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On a special note, TIKM recognizes the key roles played by the Conference Chair, Prof. Erandathie Lokupitiya from University of Colombo, Sri Lanka and the Scientific Committee. The Institute also acknowledges Prof. Mohan Munasinghe as the Keynote Speaker and Asst. Prof. Chutapa Kunsook, Prof. S. W. Kotagama, and Wiwik Harjanti as Plenary Speakers. TIKM also warmly recalls the moderators of the special workshops, Dr. Stacey Archfield, Prof. Harini Nagendra for their enthusiasm to share their knowledge on their specific fields. The contribution of the panel composed of Prof. Amal S. Kumarage, Prof. Buddhi Marambe, Mr. H. K. Wickramasinghe, and moderated by Dr. Athula Senaratne is equally acknowledged.

We also commend the support and effort of all the technical session chairs, evaluators, invited speakers and presenters, for coming all the way to Colombo, Sri Lanka to share their knowledge and expertise on the fields of Climate Change. We also want to express our gratitude to all of the participants, who came from more than 20 different nations, for their help and involvement. Our partnerships with following agencies are also acknowledged: Globeenjoy Tours – Tour and Accommodation Partner; and TIKM Events – Event Partner. Finally yet importantly, the Institute applauds the members of the organizing committee for their efforts in the fulfillment of ICCC 2023.

This report was prepared by the conference rapporteurs Mr. Dhanushka Ekanayake, a MSc. student in Climate Change & Environmental Management from University of Colombo, Sri Lanka and Ms. L. B. Sadani Panchasika, a B.Sc. student from Department of Zoology and Environment Science, Faculty of Science, University of Colombo, Sri Lanka.

INTRODUCTION

The 7th International Conference on Climate Change (ICCC 2023) was held on 9th & 10th February 2023 at the Taj Samudra Hotel, Colombo, Sri Lanka under the theme “*Climate Action and Emerging Challenges: Land and Ocean Based Solutions*”. The conference was attended by more than 150 participants physically as well as virtually representing 25 plus countries. It was organized by The International Institute of Knowledge Management (TIKM), Sri Lanka, led by the Conference Convener, Mr. Isanka P. Gamage.

The conference was aimed to bridge the gap between researchers and knowledge seekers through providing a common platform to discuss ongoing challenges from Climate Change resulted impacts on the human society, economy, health, ecosystems & biodiversity, etc. and mitigation & adaptation measures to minimize the adverse effects of Climate Change while achieving sustainable development, focusing on land and ocean based solutions. ICCC 2023 also created an arena to build networks among the academics, experts in the field and scholars in the field of Climate Change Management that could bring forth collaborations and partnerships in the future.

The Scientific Committee was composed with 14 members coming from various countries. The conference was chaired by Prof. Erandathie Lokupitiya of the University of Colombo, Sri Lanka. The key note speech was delivered by Prof. Mohan Munasinghe, 2021 Blue Planet Prize Laureate, Vice-chair of the Intergovernmental Panel on Climate Change (IPCC) and the founder chairman of the Munasinghe Institute for Development, Sri Lanka. Three plenary speeches were delivered by distinguish experts namely Prof. Emeritus Sarath Kotagama from the University of Colombo, Sri Lanka, Asst. Prof. Chutapa Kunsook of Rambhai Barni Rajabhat University, Thailand and Ms. Wiwik Harjanti from Mulawarman University, Indonesia. The two-day conference had two publication workshops and a panel discussion. The first workshop was on “Communicating Your Research – Publishing in Journals and Beyond” by Prof. Harini Nagendra of Azim Premji University, India delivered on day one. On the day two, second publication workshop was facilitated by Dr. Stacey Archfield, a research hydrologist at Water Resources, USA on “Tips for Getting Published in International Journals, Experience as an Editor and Associate Editor”. The highlight special event was the panel discussion happened in the Grand Crystal Ballroom on “Can We Achieve the Goal of Climate Action and Net Zero Targets as Planned, with the Ongoing Climate and Economic Crisis?”. Food and refreshments were provided in both days at the highest class for the participants of the conference where participants interacted with each other and made new contacts.

A total of sixteen technical sessions and virtual & physical poster presentation sessions were organized for researchers to present their work and share knowledge. The following were the technical sessions;

1. Natural resources and biodiversity in a warming world
2. Climate change: mitigation, measurements, modelling and predictions - I
3. Climate change economics, law and policy
4. Impacts, hazards, risks and effective adaptation to climate change - I

5. Climate change, awareness, green initiatives and products - I
6. Global warming, agriculture and food security - I
7. Global warming, agriculture and food security - II
8. Climate change: mitigation, measurements, modelling and predictions - II
9. Carbon management and climate change mitigation - I
10. Impacts, hazards, risks and effective adaptation to climate change - II
11. Climate change, awareness, green initiatives and products - II
12. Carbon management and climate change mitigation -II
13. Technology transfer, law and innovative solutions to climate change
14. Global warming, agriculture and food security - III
15. Climate change: mitigation, measurements, modelling and predictions – III
16. Climate change: mitigation, measurements, modelling and predictions – IV

INAUGURAL SESSION

The 7th International Conference on Climate Change 2023 (ICCC2023) was commenced with an Inaugural Session at the Grand Crystal Ballroom on the 9th of February 2023.

Welcome Address by the Conference Convener

Mr. Isanka P. Gamage - Co-founder and Managing Director, TIIKM

There Conference Convener Mr. Isanka P. Gamage, Co-founder and Managing Director of TIIKM started the proceedings by delivering the welcome address. Mr. Gamage first welcomed and introduced the conference chair Prof. Erandathie Lokupitiya to the gathering while introducing and welcoming other key speakers and panel discussion members. Special welcome given to the strategic partner of ICC2023, Friedrich Naumann Foundation for Freedom, Sri Lanka while thanking for their sponsorship extended to the event. Mr. Gamage also welcome all other parties including panel chairs, evaluators, committee members, presenters, scholars, brand ambassadors, media partners etc. and explained the purpose of the conference which are knowledge sharing, networking and discussing the latest findings on the solutions to climate change driven impacts. Mr. Gamage explained the format of the conference and elaborated why TIIKM is organizing such conference. He also introduced the 3 journals the publications will be published and finally encourage all, specially young scholars on the importance of publishing research papers with the finishing phrase “ *If the tinny Corona Virus could spread in the whole world, why us humans could not make our publications reach all corners of the world*” .

Speech by the Conference Chair

Prof. Erandathie Lokupitiya - University of Colombo, Sri Lanka

Prof. Erandathie Lokupitiya an academic and research scientist from the University of Colombo, Sri Lanka also welcomed the audience to the ICC2023 and expressed her gratitude for selecting herself as the Chair of ICC2023. After giving a basing background of the purpose and contents covered by the conference, Prof. Lokupitiya gave a detailed explanation on what climate change is and how the global warming occur specially for those who are new to the field. Showing charts, graphs & images on global temperature anomalies since 1860s industrial revolution and explained interrelationship of global atmospheric CO₂ percentage during the same period. She alarmingly stated that atmospheric CO₂ level is reached 420ppm in 2022 and elaborated the resulting global warming effect followed by extreme weather event across the world.

Prof. Lokupitiya then explained on the key milestones on the international effort in handling climate change with formation of UNFCCC in 1992, Kyoto Protocol in 1997 leading into the most important event in climate change management thus far which is the Paris Agreement(PA) in 2015 during COP 21. The main goal of the PA is to keeping the global temperature rise below 1.5 degrees Celsius (maximum 2.0 degrees of Celsius) and the chair explained the universal commitment by countries by signing the PA and commitments of the countries signed the agreement through Nationally Determined Contributions (NDCs) in order to achieve them. Prof. Lokupitiya then mentioned about the United Nation's Sustainable Development Goal (SGD) of and SGD – 13 is specifically on climate actions. The chair stated that climate change is the biggest challenge to achieving SGDs of the 21st century by explaining the dangers in the future from extreme weather event such as unusual extreme droughts, snow blizzards, floods, landslides, heat waves, cyclones & hurricanes etc. as well as slow onset climate disasters such as desertification, melting of glacial, thawing of tundra landscape & sea level rise with displaying images of devastating climate extremes from the world.

Prof. Lokupitiya then explained the costs of climate change induced disasters in Sri Lanka during recent past with examples. The chair went on to explain the contribution to global warming and climate change from Greenhouse Gases (GHGs), Short Lived Climate Forces (SLFCs), Black Carbon and other aerosols. Professor explained transboundry air pollution and dangerous cooling effect of aerosols.

A brief introduction to the Global Carbon Cycle was given with explanation of carbon sources & sinks and how anthropogenic CO₂ emissions are unbalancing the global carbon cycle with annual net plus of 4 to 5 Gigatons of carbon per year. Prof. Lokupitiya explained how developed countries contribute more GHG emissions while poor & under developed nations are suffering from adverse effects of climate change resulted extremes. Importance of using renewable energy, preserving natural resources for future generations as we seek sustainable development was explained and Prof. Lokupitiya used the phrase “Think *globally and act locally*” to explain how each individual can reduce their own carbon footprint in a collaborative effort on reducing global carbon footprint. Professor also spoke about the

wetland ecosystems and importance of preserving and creating blue carbon ecosystems as a major mitigation measure for climate change.

Lastly Prof. Lokupitiya gave a brief explanation about the contents of the conference and specially thanked TIKM for organizing the event as well as offered her sincere gratitude towards Friedrich Naumann Foundation for Freedom, Sri Lanka for their sponsorship offered to the scholars, enabling them to participate in the ICCC 2023 to expand their horizon on the field of Climate Change Management.

[Speech by the Strategic Partner - Friedrich Naumann Foundation for Freedom](#)

Mr. Wolfgang Heinze - Country Director Sri Lanka & Bangladesh, Friedrich Naumann Foundation for Freedom

Mr. Wolfgang Heinze thanked the organizers of ICCC 2023 for their initiative of conducting the conference and selecting Friedrich Naumann Foundation for Freedom as the strategic partner of the event. Mr. Heinze also thanked Prof. Lokupitiya for her passion and commitment on the field of Climate Change Management and being the chairperson of the 7th International Conference on Climate Change. He explained the importance of building a platform in modern day of which the climate change being the main threat to the sustainable development of humanity. Mr. Heinze welcomed the discussions and knowledge sharing on the impacts and solutions for climate change and explained why the foundation supporting such conferences.

Prof. Lokupitiya and Mr. Gamage presented the token of appreciation to the Friedrich Naumann Foundation for Freedom which Mr. Wolfgang Heinze accepted.

[Welcome Address from the Tshwane University of Technology \(TUT\), South Africa](#)

Prof. Jacques Laubscher - TUT, South Africa

Prof. Labcher welcomed all the academics, scholars, experts in the field & presenters to ICCC 2023 while elaborating the importance of such platforms in the modern day and age where climate change is one of the major risks to whole world. Furthermore Prof. Labcher took this opportunity to showcase the courses offered, facilities & resources available, services provided, achievements in the sporting fields and ongoing researches of the Tshwane University of Technology, South Africa and the highlight being the SunChaser 4 project on building solar powered cars. He also explained the university's focus on following the sustainable development goals of Paris Agreement. Finally Prof. Labcher wished all the success to the ICCC 2023 in his closing statement.

With that the 7th International Conference on Climate Change 2023 was officially launched. A group photograph with all attendees was followed by morning refreshments.

KEYNOTE SPEECH

Keynote Speech – Integrating Climate Policies into Overall Sustainable Development Strategy - The Balanced Inclusive Green Growth (BIGG) Path

Prof. Mohan Munasinghe - 2021 Blue Planet Prize Laureate, Vice-Chair of the Intergovernmental Panel on Climate Change (IPCC)-AR4, Chairman of Presidential Commission on Sustainable Sri Lanka 2030 Vision, Distinguished Guest Professor, Peking University, China and Founder Chairman of the Munasinghe Institute for Development, Sri Lanka.

Prof. Mohan Munasinghe, a Sri Lankan born internationally recognized physicist, engineer & economist who possess expertise in the fields of energy, water resource management, sustainable development and climate change delivered the keynote speech of ICC 2023. Thanking the conference chair and the organizers for giving him the opportunity to deliver the keynote speech of the conference.

Prof. Munasinghe began his speech with stating that the world is striving to achieve sustainability in the 21st century, including economic prosperity, social progress and environmental protection while climate change being an important challenge to it, yet it is only one of 17 Sustainable Development Goals (SDGs). Professor stated that the best way to implement climate change policies is to integrate them within the holistic sustainable development strategy and the Integrated, Trans-disciplinary Sustainomics Framework and Balanced Inclusive Green Growth (BIGG) shows us how to do this. He stated the importance of whole world getting together as one planet to save the earth and ourselves by acting together immediately. Key global issues such as poverty, inequality, resource shortage, financial sector collapses, conflict, insecurity & shift towards more multipolar world weak leadership & poor decision making, unexpected shocks including pandemics, human-made & environmental disasters, greed, corruption, violence, etc. that are blocking sustainable development was explained while naming climate change as the ultimate threat multiplier, worsening all other issues. He explained that stakeholders are disunited in addressing above issues and people, specially in the middle level like city mayors, operational level managers of government & private organizations etc. in developing and implementation of robust & integrated strategies in tackling climate change.

Prof. Munasinghe then showed the nine key resource systems of the world and out of that, in four systems, sustainability limits already exceeded by humans and are at a dangerous level. Those are biosphere integrity: species extinction & biodiversity loss, biogeochemical flows, land system change: deforestation & desertification and climate change. He stated that biosphere integrity and climate change are core limits and exceeding them will shift the earth system into an unpredictable & dangerous state. Professor also showed the climate tipping elements of the globe marked in a world map based on global warming trends. ICC has already proved that global warming is true. Continuing climate change will cause great & irreversible harm to humanity and brunt of the impact of it is felt by the poor nations and

societies within a nation which is known as “Climate Injustice”. The ray of hope to come out of this situation is sustainable development according to Prof. Munasinghe.

Nexus of resource limits, inequity & poverty of today’s world was explained by the professor constructively. Unfair consumption and ecological footprint of global north as well as rich in global south well explained using champagne glass theory which shows being at the top tier of the glass, richest 20% of the world population gets 85% of world income in 2010 while poorest 20% gets 1.4% of world income. With facts he showed, in 2012 we needed 1.5 sustainable capacity earths to meet current style of consumption and by 2030 we will need almost 2 earths. But as we all know we only have one earth with depleting resources, Prof. Munasinghe highlighted. However with all this overconsumption, close to 1 billion people of the world are starving is a frightening and a sad fact highlighted in the speech. He then explained how to achieve global sustainable development with good alignment of all productive assets by stating sound financial markets and economic growth should be based on the true value of the productive economic asset base, which means people must not focus only on financial market status but also need to look after the bio-geo-physical resource base. In simple terms, financial growth must be achieved while maintaining healthy natural resource base and poor leadership of the world focused on financial data and disconnected from assets in the real world which are natural resources, biodiversity & ecosystems according to Prof. Munasinghe. As examples he elaborated while world leaders and governing bodies spending \$ 2 trillion in bailouts of rich companies & banks, world military expenditures in 2021 during covid reaching \$ 2 trillion, only few billion dollars are allocated to climate change mitigation.

On the way forward in order to achieve sustainable development while mitigating climate change, professor gave a detailed explanation about Sustainomics Framework and Balanced Inclusive Green Growth (BIGG) path, which he introduced and presented at the 1992 Rio Earth Summit, formally known as the 1st United Nation’s Framework Convention on Climate Change (UNFCCC). Thought widely and applied worldwide in past 30 years, Prof. Munasinghe stated that Sustainomics & BIGG can solve both short term issues such as poverty & hunger, and long term problems like climate change. The two concepts will help implement UN 2030 Agenda & SDG -17 in climate change management according to the professor. He also elaborated four core concepts on achieving it which are Making Development More Sustainable (MDMS), Harmonizing the Sustainable Development Triangle (sustainability in economic, social & environmental aspects) for balance & integration, Transcend Boundaries of Sustainable Development through Innovation & New Ideas and Full Cycle Application of Integrative Tools, from data gathering to practical policy implementation. Prof. Munasinghe gave examples to elaborate fore core concepts in detail. He also highlighted personal lifestyle changes need to follow such as non-motorized transport & use of public transportation, eat less meat, consume less etc. that reduce personal carbon footprint in the path to achieve sustainable development. One key point he highlighted was that eliminating unethical values that drive unsustainable development. He also pointed out building essential ethical and moral values especially among the younger generation for the world to move in the path of sustainable

development and predicted unless urgent changes not made, unsustainable global system may collapse.

Prof. Munasinghe then explained the Green Growth(GG) concept to the audience which shows how to achieve partial sustainability through balancing environmental damage and economic development. He described 21st Century's Earth Eco-Civilization framework which focus on happiness and wellbeing of the society, not only material growth, giving Butan's as an example. He then explained Sustainable Consumption with mentioning 1/3rd of world food production is lost or wasted in homes specially in developed countries (USA - 50% & Europe - 30%), yet 800 million people are in starvation with data and figures. Professor also introduced SustainoMusica, is an international consortium of musicians and music lovers who believe that music and song constitute a universal language that can be used effectively to communicate the message of sustainability to everyone on the planet. This concept was an idea Prof. Munasinghe came up in Rio de Janeiro beach, involving beach musicians and launched during 2012 Rio+20 world summit. Professor continue his speech with explaining Sustainable Production with examples from world's leading brands with lifecycle analysis of CO2 emissions in Tea industry of Sri Lanka, Orange juice production of Brazil, Milk industry in the UK and Garment industry of Sri Lanka. He then explain the way of linking sustainable producers and consumers to create sustainable market & culture by linking small groups of pioneering consumers and producers, then eventually collaborating such groups together to build a larger sustainable market in the world. Prof. Munasinghe also explained about the two way link between Climate Change and Sustainable Development, and human responses affecting it with feedback scenarios, for example, human actions are causing GHG emissions resulting in increase of atmospheric GHG which increases global warming and climate change. Climate change then causing extreme events that in return making social & economic losses to humanity. Professor showed images of very recent examples from 2021 on damages caused by extreme floods and forest fires as examples for negative feedbacks to human society from climate change that caused because of anthropogenic activities itself.

The speaker then move on to explain climate injustice, energy poverty & inequity and the way forward on rectifying that to achieve sustainable development by achieving economic efficiency - maximum growth, environmental protection – green energy with internalizing the externalities and social equity – by affordable energy for low income communities. Prof. Munasinghe explained that raising energy prices will meet economic and environmental goals with less pollution, but not social equity goal, because high price will deprive poor of basic energy needs & worsen energy poverty. Block pricing structures with a subsidized minimum use block for poor homes, provide a practical compromise among conflicting goals. Professor explained this concept through a case study findings of Sustainomics-BIGG application at micro level carbon emissions mitigation in Sri Lanka's mini hydro projects. He then elaborated a macro level planning of the concept in "Sustainable Sri Lanka 2030 Vision and Strategic Path" created by presidential expert committee in 2017 chaired by Prof. Munasinghe himself, which is a multi-sector plan with cross cutting strategies.

Prof. Munasinghe warned the experts on potential surprises that may slow down the sustainable development path such as unexpected climate extreme events, pandemics such as Covid-19, terrorism and conflicts, break out of major wars such as Russia invading Ukraine, economic crises like in Sri Lanka. The solution would be resilience building to face unexpected scenarios through innovative thinking which will help us survive in a dynamically changing world.

As the closing statement Prof. Munasinghe highlighted the importance of balancing an individual's Personal Sustainability Triangle consist with balancing ones' work, health and social interaction as the key to a happy, contented and sustainable lifestyle. His final message for Sri Lanka and world was on how to overcome ever increasing multiple, interlinked global problems that serious challenge to humanity. By working together, with multidisciplinary researches etc. we can solve those problems and Sustainomics & BIGG show us how to take the first steps toward and making development more sustainable according to Prof. Munasinghe. Good governance, integrity are a must. People must work with governments in managing post covid economic & social recovery. Prof. Munasinghe encourage young people to lead the way in devising 21st century paths for sustainable development in Sri Lanka and world. Finally Prof. Munasinghe reminded an ancient Pali blessing which showcase even in ancient times, Sri Lankans were in sustainable approach. They always wished for a favorable environment, economic prosperity. Social stability and good governance were well identified as key pre-requisites for making development more sustainable. And with new concepts and innovations today we are only rediscovering these old truths!

PLENARY SPEECHES

There were three plenary speeches in ICCC 2023 by three distinguished academics.

[“Do Your Part Before It Is Too Late”](#)

Prof. Emeritus Sarath Kotagama - *University of Colombo, Sri Lanka*

Prof. Sarath Kotagama of the University of Colombo, a prominent ornithologist and environmentalist in Sri Lanka delivered the main plenary speech of ICCC 2023. The professor started his speech by questioning the crowd “Are you ready for an unpredictable and uncertain tomorrow” with regards to climate extremes and played “Earth Lung” song on climate change. His unique approach grabbed the attention of the whole audience.

The speaker stated that in only 2022, there were 22 major environmental disasters costing over \$ 3 billion in damages to the economies of the world. As in previous speeches, Prof. Kotagama also stated that poor will suffer more and climate impacts in the future in poor nations may create lower financial cost, but substantially higher human cost. Sighting the Global Risk Report 2023, professor stated that though cost of living crisis dominates next two years peaking in the short term, climate action failure and biodiversity loss and ecosystem collapse will dominate the next decade with signings were already there in past couple of years.

After an eye catching introduction, Prof. Kotagama explained climate change, impacts of it and mitigation measures in a three part lecture. He stated that climate change is a *Simple*, but a *Serious*, however a *Solvable* problem.

Professor explained the simple facts and causes of climate change. According to 97% of active scientists and 99.9% of scientific research studies published in peer-reviewed scientific journals find that human-caused climate change is happening. He explained how anthropogenic GHG emissions causing greenhouse effect that warms the globe causing climate change.

He then went on to explain how serious the problem of climate action failure would be with scientific explanations on how extreme climate events are happening. Prof. Kotagama elaborated that using yearly facts and anomalies explained using graphs on increasing temperature over time with parameters such as increase in lowest temperatures each year, increase of warmest summer night figures, increasing number of days above 90 degree Fahrenheit over time, image comparisons of past vs present in glaciers on size reduction, ocean heat increasing maps. Prof. Kotagama gave a detailed explanation on ocean warming and sea level rise with how global warming causing it, and impacts using graphs and images. He then explained the impacts of extreme weather events. Through images and graphs the professor elaborated how climate change has increase the frequency and magnitude of heavy rains, hurricanes & cyclones, higher storm surge, wildfires etc. and devastations caused to human society as well as ecosystems & wildlife.

Prof. kotagama then explained the health impacts arising due to climate change. He mentioned the increasing trend of respiratory illnesses due to worsening air quality, more heat related illnesses, increasing risk of vector-borne and food-borne diseases, water and food poisonings from algae blooms and more CO2 level in atmosphere etc. He further went on to explain that climate change is impacting how we live our lives as it is affecting traditional activities that parents have long passed down to their kids. Rising temperatures make outdoor & recreation activities such as sports, festivals, and summer camp uncomfortable or even dangerous. Less consistent snow seasons put skiing, ice fishing, pond hockey, and other winter sports at risk. He stated that climate change is even threatening the agriculture areas that leads to our coffee, beer, wine, and chocolate.

Professor stated that every one tenth of temperature is matters with a comparison of levels of impacts between 1.5 vs 2.0 degrees Celsius increase compare to pre-industrial level. Next he explained how climate change is affecting environment and sustainable development in Sri Lanka. He alarmingly stated that maximum and minimum day/night temperatures in all of the country's metrological stations is clearly being increased which means Sri Lanka's tropical wet zone will become drier and dry zone could become barren. Prof. Kotagama highlighted most vulnerable sectors due to climate change of the country namely agriculture, health services, water resources & water security, tourism & coastal fisheries. From his field of expertise, Prof. Kotagama then explained the impact to biodiversity of Sri Lanka from climate change with AR projections on specie extinctions with temperature increase with examples.

As the final part of the speech Prof. Kotagama explained the Solvable aspect of climate change. Immediate & large scale reduction of emissions, move into farming practices that increase soil carbon, maintaining and increasing carbon sinks, specially wetlands. He explained the power of trees in combating climate change with absorbance of atmospheric CO₂, stopping surface run-offs thus soil erosion etc. Professor explained climate change adaptation measures we humans can take as individuals as well as a society collectively while elaborating the National Climate Change Adaptation Strategy for Sri Lanka 2011 - 2016. The importance of placing the correct technocrats in right places for better decision making was highlighted during the Q&A discussion at the end of the speech.

Lastly Prof. Kotagama wish all the best for ICC3 2030 in achieving its intentions.

[“Blue Carbon in Sea Grass Ecosystem in the Eastern Gulf of Thailand: The Indirect Contribution to Climate Change Mitigation”](#)

Asst. Prof., Dr. Chutapa Kunsook - Rambhai Barni Rajabhat University, Thailand

A marine biologist and the project leader of Crab Research and Coral Rehabilitation in the Eastern Gulf of Thailand, assistant professor Chutapa Kunsook delivered the second plenary speech on blue carbon in sea grass ecosystems in the eastern gulf of Thailand and its contribution in carbon sequestration as a step forward in climate change mitigation.

Dr. Kunsook first introduced her university to the audience including main services provided such as installing 17 carbon banks in the eastern gulf of Thailand. She then explained what Blue Carbon is and how much high proportion blue carbon eco systems can do carbon sequestration. Blue carbon ecosystem is known as the best carbon sink and storing system in the earth as explained by Dr. Kunsook. She then explained the degradation of blue carbon ecosystems and dangers of it. Giving priority to Sea Grass, she explained the audience about sea grass eco system and the difference between sea grass and sea weeds which often getting mixed up. Ecosystem services from sea grass ecosystem was elaborated in detailed by Dr. Kunsook such as providing nourishment & shelter for marine species, act as a safety barrier from sea erosion, storm surge etc. for the coastal communities & infrastructure, providing livelihoods through recreation & tourism etc. She also showcased her research site locations, images of work done. The speaker also showed her research results and benefits of her researches to the community. Dr. Kunsook highlighted the importance of local community collaboration on preserving and restoring sea grass ecosystems and benefit of it to them. Finally she acknowledge the support she received from various parties on her research and sponsorships to joining ICC3 2023 in her closing remarks.

“Climate Change Mitigation Commitment of Indonesia in the middle of Extractivism Dependency”

Wiwik Harjanti - *Mulawarman University, Indonesia*

Ms. Harjanti started the speech by giving a background of Indonesia with description of country's landscape and vulnerabilities to climate change. She then gave a detailed explanation on Indonesia's commitments to climate change mitigation with imposed strong laws and regulations in meeting NDC commitments to Paris Agreement. Increasing emission targets, expansion of nature conservation and restoration, implementation of carbon tax, development of electric vehicle ecosystem, and initiation of a biodiesel program to name a few. Then Ms. Harjanti explained East Kalimantan region's commitments to mitigate climate change. She also explained the work done by Mulawarman University in East Kalimantan province in climate change mitigation such as rehabilitation programs of critical mangrove forests especially in the Delta Mahakam region and the New Capital City in Penajam Paser Utara Regency regions. She also explained region's climate change mitigation targets in brief such as ensure smooth and sustainable climate finance and restoring 756 thousand hectares of peat and mangrove areas.

With all above efforts taking place in mitigation, Indonesia also possess many widely known climate change causing activities such as deforestation for palm oil industry, peatlands depletion, oil & gas mining. Those contradictions to climate change mitigations were well explained by Ms. Harjanti. East Kalimantan's dependency on “Extractivism” explained in detailed by the speaker. How it is creating social vulnerability and predatory characteristics, creating inequality among generations and islands were well explained. Through an island map of Indonesian archipelago Ms. Harjanti elaborated the extended GHG emissions happening as a cycle of events which are digging, transporting, coal burning, and consuming mineral & energy as a result of extractivism in Kalimantan Island. Then she approached to multiple environmental injustices aroused from coal extractivism. In her conclusions and recommendations, Ms. Harjanti explained the lack of synchronization of regulations and policies has a high negative effect in achieving climate change adaptation and mitigation targets in Indonesia. Some weak law formation enables big corporates to do environmental crimes and unlawful acts that creat crises and conflicts in society has to be reevaluated and changed accordingly with country's NDC commitments. Moratorium on licensing of industries that affect climate change mitigation is recommended by the speaker in her closing statement.

PUBLICATION WORKSHOPS

Two publication workshops were conducted during ICCC 2023 by two internationally renowned academics involved in research publication.

[Communicating Your Research – Publishing in Journals and Beyond](#)

Prof. Harini Nagendra - Azim Premji University, India

Prof. Eduardo Brondizio of Indiana University Bloomington, USA introduced Prof. Harini Nagendra to the audience. She joined the gathering through zoom. Prof. Nagendra started her presentation by explaining what a peer review is and importance of that in improving the quality of a publication. She then explained the reasons to why a publication can get rejected followed by how to plan and create a strong manuscript with clear and useful message that explained in a logical manner for readers to grasp easily. General structure of an article, guidelines for authors, abstract compilation, effective manuscript title selection and process of building up the research paper was well explained by Prof. Nagendra. Structure of a research paper was described in detailed during the workshop by the speaker.

She then explained about editor's review followed by an explanation of manuscript types which are full articles, letters or short communications and review papers. Review papers are good for young researchers who are starting in writing research papers according to Prof. Nagendra. She highlighted the importance of always getting opinions & feedbacks from colleagues and supervisors prior to submit an article for journal publication.

Prof. Nagendra then moved into explaining how to select the correct journal to publish your article with steps to follow and examples. The speaker explained about the correct way of responding to the reviews which is one of the most important steps in publications according to her. She explained the importance of not showing irritation even you are disagree with the comments from reviewers and finally Prof. Nagendra mentioned that we should not take rejections personally as it is a part of the process and young researchers must not get discourage by rejections. She concluded her workshop by encouraging the young researchers in the conference to keep writing manuscript that would expand the capabilities and wish the two day conference all the success in meeting its intended goals.

[Tips for Getting Published in International Journals: Experience as an Editor and Associate Editor](#)

Dr. Stacey Archfield – Research Hydrologist, Water Resources, USA

Research hydrologist by trade and editor as well as co-editor of reputed science journals started the workshop by giving an overview of herself, work area and research publications done. She started on describing how to prepare your manuscript with referring the acronym MAGIC from Robert P. Abelson's 1995 book Statistics as the principled argument which has suggestions for persuasive arguments, which help authors provide context beyond statistical reporting. MAGIC stands for Magnitude, Articulation, Generality, Interestingness, and Credibility and Dr. Archfield explained on each with relationship to formulation a good research paper.

Dr. Archfield then gave a detailed explanation on common reasons for manuscripts get rejected by specially emphasizing on errors which should do not done. She highlighted the importance of a strong introduction and stated that most articles get rejected due to poor introduction. She also highlighted the importance of statement of hypothesis such as “Therefore, we hypothesize...” and “For this reason, we propose...” to be in the introduction as well as in the conclusion and editors and associate editors will read the introduction first and the last few paragraphs carefully to look for these statements, thus it will determine if the manuscript moves on to review or get rejected.

Then she explained about overcoming novelty criticisms in the next part of the program with approaches and methods to follow. As in the previous workshop Dr. Archfield also gave a detailed explanation on common reasons for rejection of an article, focusing on each main sections which are introduction, methods, data & result elaboration and conclusion. This was followed by an explanation on things to consider in revisions and writing the response documents by making it simple and easy to understand. She stated that for major revisions and reject & resubmit decisions, it is helpful to write a summary of the major changes before the point-by-point responses.

Finally Dr. Archfield gave some common tips of making a manuscript attractive and valuable as well as to prepare a complete journal article with some examples. She mentioned that reviewing your peer’s articles will give a better prospect of you preparing a good manuscript itself and encourage young researchers to follow the same.

With that workshops of ICCC 2023 concluded with giving specially the young academics some valuable information on article publication.

PANEL DISCUSSION

“Can We Achieve the Goals of Climate Actions and Net Zero Targets as Planned, with the Ongoing Climate and Economic Crisis?”

One of the highlights of ICCC 2023 was the panel discussion held during the day one of the conference. The panel discussion was moderated by Dr. Athula Senaratne, senior agriculture specialist at World Bank, Sri Lanka. Panelists of the forum were experts in the fields of transportation, agriculture and renewable energy in Sri Lanka namely Prof. Amal S. Kumarage of University of Moratuwa, a transport sector expert, Prof. Buddhi Marambe of University of Peradeniya who is a leading scientist in agriculture field and Mr. H. K. Wickramasinghe, a renewable energy expert currently serves as the Deputy Director General of Sri Lanka Sustainable Energy Authority of Sri Lanka.

Dr. Senaratne first gave a detailed introduction on the three panelists and objectives of the discussion which is on how Sri Lanka to achieve climate actions and net zero targets while the country is facing a debt and foreign currency crisis simultaneously whole world is going through a tough time with post pandemic challenges and Russia-Ukraine war. In the first part of the discussion, he invited three experts to explain the situation in each sector of their expertise with regards to current economic crisis and climate change mitigation in each sector.

Prof. Kumarage started the discussion by giving a perspective of the historical evolution of transport sector and how to mitigate GHG emissions from it since transportation being the largest GHG contributor to the atmosphere. He stated that in Sri Lanka, 65% of the fossil fuel requirement is consumed by transportation sector while renewable energy use is merely 1% or less. He spoke about NDC targets under his sector while stating that adaptation of NDCs must be considered taking current economic crisis into account, showing how difficult to meet the sector emission reduction targets in current difficult status of the country. Prof. Kumarage however believes future will be bright in achieving low emissions with generation z and millennials doesn't possess a goal of owning a vehicle and are more into low emissions and use of public transportation etc.

Then Prof. Buddhi Marambe explained the situation of the agriculture sector with regards to meet net zero targets and NDCs. Professor historical approach of climate variability in the ancient Sri Lankan kingdoms with its hydrological civilization and cascading tank system. He then explained about the importance of agriculture and food security. Professor also highlighted the importance of having the food security and wrong decision markings in agriculture leading into food insecurity in Sri Lanka. He also explained how transportation and renewable energy sector directly impacting agriculture sector which is a sector contributing to climate change as well as a sector which can be used to mitigate climate change.

Mr. Wickramasinghe started his discussion with explaining current challenges in the energy sector and renewable energy with regards to current economic crisis of Sri Lanka. He highlighted that as a smaller nation, Sri Lanka's GHG mitigation in energy sector is not

impacting to global GHG emission reduction that significantly unless the big six energy using nations do their part, which they are not meeting. He also explained about the Mannar wind power project and main challenges Sri Lanka faces in attracting investors to develop such projects elsewhere in the country. Mr. Wickramasinghe further mentioned about the importance of international fund providers such as the World Bank and Asian Development Bank in improving the renewable energy sector of the country. On a positive note, he stated that current economic crisis driven high energy cost however has pushed high energy consumers to move into energy efficient motors & machinery. He also highlighted that current as well as past governments' negligence of energy saving policy implementation in energy, transportation and electricity sectors is the main challenge to meet climate change mitigation and net zero targets in Sri Lanka.

Initial explanations of the three sectors was followed by a very informative & valuable Q&A session of which distinguished academics and scholars of the audience joined in with questions and opinions to the panel of experts whom further elaborated the facts and information that further enlightened the forum.

TECHNICAL SESSIONS

There were 16 technical sessions and 9 poster presentations conducted simultaneously in three separate halls of the conference venue. There were both physical as well as online sessions facilitated by the organizers.

Technical Session 1: Natural resources and biodiversity in a warming world

Chaired by: Prof. Erandathie Lokupitiya (University of Colombo, Sri Lanka)

Evaluated by: Dr. Sonali Senarathne Sellamuttu

Author/s	Topic
D.L.S.S. de Silva Abenayake, H.S. Dissanayake <i>Open University, Sri Lanka</i>	Progress of Climatic Change and Biodiversity Research in Sri Lanka
Ziffer-Berger J <i>(Levinsky-Wingate Academic College, Israel)</i>	Dwarf Shrubs Help to Combat Desertification in Semi-Arid Climate by Facilitating the Germination of Trees
Aberathna W.S.S.L., Chaturanga H.N., Senanayake F.R., De Zoysa D <i>(Belipola Arboretum and Research Center, Sri Lanka, University of Peradeniya, Sri Lanka)</i>	Development of Primary Ecosystem Servicing Values of Selected Plant Species in Lowland Rainforest Ecosystems of Sri Lanka - As a Proxy for Establishment of Green Economic Payment Platform and Towards Conservation
Barik A., Baidya Roy S. <i>(Indian Institute of Technology, Delhi, India)</i>	Assessment of Potential Impacts of Climate Change on the Health and Productivity of Indian Forests

Technical session 1 focused on climate change's impact to the plants and forest ecosystems and community welfare through climate change mitigation and biodiversity conservation. H.S. Dissanayake discussed on biodiversity loss due to climate change while J. Ziffer-Berger explained how desert plant species such as dwarf shrubs can help in revising desertification in semi-arid climates where climate change is the biggest contributor to desertification. The highlight of technical session 1 is the introduction of Bio-currency concept by W.S.S.L Aberathna of which locals can get economic benefit through carbon credits for increased live photosynthesis biomass (newly planted & grown trees) by themselves. A. Barik gave a thorough analysis on the flight of forests of India with increasing land day & night temperatures due to global warming derived through model simulations.

Technical Session 2: Climate change: mitigation, measurements, modelling and predictions - I

Chaired by: Prof. Asha Karunaratne (Sabaragamuwa University of Sri Lanka, Sri Lanka)

Evaluated by: Tariene Gaum (Tshwane University of Technology, South Africa)

Author/s	Topic
Sattaso C., Sooksing P., Nuangun C., Srikongrug S., Yhassana C., Rattanarajanukul N., Charrunchon S (<i>Rambhai Barni Rajabhat University, Thailand</i>)	Comparing Climate Change Effects on the Occurrence of Wild Fires in Western Australia and Thailand
Dimitrios Anastasopoulos (<i>Cambridge Center for International Research, Athens College, Greece</i>)	Climate Change and the Vulnerability of National Economies: The Case of Egypt and Vietnam
Talukder A., Rahman S.H. (<i>Jahangirnagar University, Bangladesh</i>)	Effect of Solar Radiation Management (Stratospheric Aerosol Injection) on Future Drought Characteristics in Bangladesh
Delos Reyes I.T., Manuel III I.A., Arpa M.C.B. (<i>Mapua University, Philippines</i>)	Hazard Assessment through Predictive Flood-Risk Analytics: A GIS-Assisted Case Study of Pinatubo Volcano Lahars in San Narciso, Zambales
Ferrucci G. (<i>University of Western Ontario, Canada</i>)	Central American Coffee Farmers' Migration to the USA: An Analysis of the Multi-Causal Nature of climate-driven Migration

This session focused on both physical and economic impacts of climate change based on the data measurements, modelling and prediction and mitigation measures. C. Sattaso explained about the wildfires in Western Australia and its impacts to the air quality in both Australia and Thailand using period-over-period data analysis. Dimitrios Anastasopoulos explained about economic impacts of climate change in 2 developing countries, Egypt and Vietnam as well as adaptation & mitigation strategies. A. Talukder explained about how solar radiation impacting duration of and severity of droughts in Bangladesh using statistical data, scientific modeling and simulations. Use of modeling and simulation to determine flood risk in Pinatubo, Philippines presented by I.T. Delos Reyes. G. Ferrucci of University of Western Ontario presented how climate change resulted diseases harmed central American coffee industry and human migration caused by that. It was an eye opening presentation which elaborated the severity of climate crisis.

Technical Session 3: Climate change economics, law and policy

Chaired by: M. Nasir Uddin (Global Climate change Foundation, Bangladesh)

Evaluated by: **Dr. Mohamed Esham (Sabaragamuwa University of Sri Lanka, Sri Lanka)**

Author/s	Topic
Meriem Hamid, Mohamed El Ghachi (Laboratory DPPR-faculty of Letters and Human Sciences, Beni Mellal, Morocco)	Seasonal Temperature Variability During the Period (1990-2020) In the Hydraulic Basin of Oum Er Rbia (Morocco): Study of Anomalies and Trends
Khalid Ahmad Mohd, Tokemoto Akio (United Nations University, Keio University, Japan)	Enhancing Climate Ambition: Insights from Global Synergies Conferences
Susmiyati H.R., Harjanti W., Hidayah R.A., Alfina Grizelda, Najidah W., Hardi E.H., Diana R., Palupi N.P. (Mulawarman University, Indonesia)	Legal Framework for Climate Change Action Plans for Mangrove Care Villages
Dr. Arya S., Aiyappa M. (Symbiosis International University, India)	Climate Change Liability: Finding the Right Forum in Law
Yilmaz M. (Dept. of Civil Engineering, Atilim University, Turkey)	Investigation of Daytime and Nighttime Temperature Trends over Turkey

This session focused on economic impact of climate change and laws & policy formation needed in mitigation. Meriem Hamid showcased the seasonal temperature variability and rainfall anomalies & trends of Qum Er Rbia hydraulic basin of Morocco is impacted by climate change. Khalid Ahmad Mohd discussed about the key implementation challenges and issues which are critically impacting joint implementation and success of the Paris Agreement and Agenda 2030 for Sustainable Development. While Wiwik Harjanti highlighted stronger legal instruments are needed on mangrove protection and rehabilitation in the villages in the Delta Mahakam in Indonesia, S. Arya discussed about the legal backgrounds regarding climate change mitigation activities of India. Finally, M. Yilmaz explained the increase of both day time and night time maximum temperatures in Turkey and effects of it due to global warming.

Technical Session 4: Impacts, hazards, risks and effective adaptation to climate change - I

Chaired by: Prof. Deepthi Wikramasinghe (University of Colombo, Sri Lanka)

Evaluated by: Dr. Eranga M. Wimalasiri (Sabaragamuwa University of Sri Lanka)

Author/s	Topic
Reet Kamal Tiwari, Deepali Gaikwad (Indian Institute of Technology, Ropar, Punjab, India)	Outburst Hazard Assessment of Glacial Lakes in Sikkim Himalaya using AHP Multi-Criteria Decision Making Methods
Suthakaran S., Rajendram K. (Department of Geography, Eastern University, Sri Lanka)	An Assessment of Flood Risk in Killinochchi District, Sri Lanka, using Open-Source Geo-Spatial Technology

Wickramathilaka H.M.K.D., Amarasinghe A.A.A.P., Bandara J.M.T.K., Ekanayake J.B., Godaliyadda G.M.R.I., Ekanayake M.P.B., Herath H.M.V.R. (University of Peradeniya, Sri Lanka)	Remote Sensing Based Pandemic Risk Assessment in Urban Environments: A Case Study with Covid-19 Experience
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This session's mainly focused on climate change induced hazards and how to overcome those through effective and timely responding and resilience building. Dr. Reet Kamal Thiwari explained the significant increase of the number of glacial lakes in Sikkim region of the Himalayas from 1990 to 2020 simultaneously to the rising global avg. temperature and explained how further melting of glacial ice and increasing heavy rains has led to catastrophic disaster of glacial lake outbursts in areas such as Ladakh, India. S. Suthakaran also explained the extraordinary heavy rains causing flash floods and riverine floods in northern Sri Lanka which is as a result of climate change. All the presenters explained about resilience building and mitigation measures of extreme events, while awareness building to detect early warnings and immediate alerting system implementation as life savers in those rural regions.

Technical Session 5: Climate change, awareness, green initiatives and products – I

Chaired by: Prof. Jacques Laubscher (Tshwane University of Technology, South Africa)

Evaluated by: M. Nasir Uddin (Global Climate change Foundation, Bangladesh)

Author/s	Topic
Mahan Mohammadzadeh, Mehdi Nezhadnaderi, Mehdi Ebadi, Arash Totonchi (Islamic Azad University, Marvdasht, Iran)	Concrete Elements with Cement Composites Containing Tio ₂ , Silica Fume, and Nano-Silica for Removal of Contamination on the Surface
De Leon J.M., Baynosa M.L., Aberilla J.M. (University of the Philippines, Diliman, Philippines)	Life Cycle Assessment of Bamboo Briquette Production in Iloilo, Philippines
Andi Luthfi, Marlon Ivanhoe Aipassa, Esti Handayani Hardi, Ibrahim (Mulawarman University, Indonesia)	Alternative Utilization of Ex-Mining Holes in Mining Activities Pt. Bukit Baiduri Energy in Samarinda City and Kutai Kartanegara Regency East Kalimantan Province
Rakwadi M., Laubscher J., Igugu H.O., Gaum T. (Tshwane University of Technology, South Africa)	The Impact of Two Ventilation Strategies on Indoor Air Quality and Thermal Comfort in Botswana Secondary School Classrooms

Highlights of this secession are Jasmine May de Leon's explanation on how science & technology helps carbonized bamboo waste can be used to reduce fossil fuel usage, carbon sequestration through reforestation of bamboo in climate change mitigation in the Philippines. Also Dr. Henry Igugu highlighted the less discussed impact of climate change which is the day time indoor temperature increase through his studies in secondary schools in Botswana which was a real eye opener.

Technical Session 6: Global warming, agriculture and food security – I

Chaired by: Dr. Mohamed Esham (Sabaragamuwa University of Sri Lanka, Sri Lanka)

Evaluated by: M. Nasir Uddin (Global Climate change Foundation, Bangladesh)

Author/s	Topic
La Croix C., Visetnoi S. (Chulalongkorn University, Bangkok, Thailand)	Climate Risk Perceptions Among Thai Farmers: Case of Rice and Durian Farmers
Paramitha I.G.A.A.P., Park J.Y., Mamyrkulova B., Lee J.S. (Konkuk University, Korea)	Methane Emissions with Various Irrigation Systems in South Korea
Ocelli Pinheiro R., Gentilini S., Paula L.F.A., Giardino M. (Dept. of Earth Sciences, University of Turin, Italy, Magma UNESCO Global Geopark, Egersund, Norway and Federal University of Minas Gerais, Belo Horizonte, Brazil)	Development of Geopark, GEO food and Climate Change Strategies in Rural Communities: Tackling Environmental Challenges
Loshini Pillay, Fannie Machete, Rodney Hart (Independent Researcher, South Africa)	Exploring the Use of Phytoremediation and Sustainable Methods of Agriculture in Alleviating the Pollution in the Uthongathi River Estuary in South Africa

This session focused on the impacts of agriculture sector in expediting climate change and related scenarios. During the session 6 C. La Croix explained the perception of Thailand's high value crop cultivating farmers' perception towards climate risk and how different type of crops, different regions and socio-economic factors are effecting perception levels of farmers. A.P. Paramitha discussed about the methane emission of rice cultivation which contributes to increasing atmospheric GHG concentration that increases climate change in their study in Korea. P.R. Ocelli explained how the rural Brazilian geodiversity and biodiversity related concepts can provide sustainable development initiatives to the rural communities which goes along the climate change mitigation L. Pillay elaborated the sustainable methods of agriculture helps to mitigate the emissions of GHGs as well as the need of phytoremediation.

Technical Session 7: Global warming, agriculture and food security – II

Chaired by: Dr. Reet Kamal Tiwari (Indian Institute of Technology, Ropar, Punjab, India)

Evaluated by: Prof. Erandathie Lokupitiya (University of Colombo, Sri Lanka) and

Prof. A. L. Sandika (University of Ruhuna, Sri Lanka)

Author/s	Topic
Jayasinghe J.A.W.W., Kiriella K.G.T.N., Senanayake D.M.N., Wijepala P.C. (Central Environment Authority, Sri Lanka and Monash University, Australia)	Effectiveness of Microbial Biofilms in Re-strengthening the Lost Soil Microbial Diversity Under Various Temperatures Characterizing Effects of Climate Changes: A Case Study (An Incubation Experiment)
Perera H.G.N., Koralagama D. (University of Ruhuna, Sri Lanka)	Impact of Climate Change on Sail Canoe Fisheries in Negombo

Koralagama D.N., Thilakshana U.P.G.K.J. (University of Ruhuna, Sri Lanka)	Impact of Climate Change on Dried Fish Processing
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J.A.W. Wethma Jayasinghe elaborated the use of soil microbial biofilms in afforestation of abandon agricultural lands to increase carbon sequestration as a step to slow down climate change. Meanwhile Dilanthi Koralagama explained how poor coastal sail canoe fishermen are suffering from slow wind speed and change of wind direction from what it was used to be in Negambo lagoon. K.J. Thilakshana also explained how coastal livelihoods are impacted badly by the climate change with her presentation on the recent climate variability are reducing the income of dry fish processing communities in the coastal Sri Lanka.

Technical Session 8: Climate change: mitigation, measurements, modelling and predictions - II

Chaired by: Prof. Maxim Shoshany (Israel Institute of Technology, Israel)

Evaluated by: Prof. Christina Shanthi De Silva (The Open University of Sri Lanka)

Author/s	Topic
Diwayanjalee G.R., Premaratne W.A.P.J. (University of Kelaniya, Sri Lanka)	Temporal Variation of Water Quality in Nilwala River in Southern Province of Sri Lanka between March and October 2019
Ranasinghe R.A.M. (University of Peradeniya, Sri Lanka)	Seasonal Rainfall Variability and Their Effects on Floods in Colombo District within the period 1987 to 2017
Withana P.M., Lokupitiya E., Rajapaksha I. (University of Colombo Sri Lanka & University of Moratuwa, Sri Lanka)	The Influence of Land Use and Land Cover Changes on Formation and the Spatial Variability of Urban Heat Island in Colombo Metropolitan Area
Gunawardena M.A., Lokupitiya E.Y.K. (University of Colombo, Sri Lanka)	Global Warming Potential and Soil Carbon Storage of Conventionally and Organically Grown Pineapple in Gampaha District of Sri Lanka

This session focused on the climate change related variations in the rain, water quality with mineral level changes as well as anthropogenic influences resulted heat island effect(urban environment become more hotter than surrounding due to lack of open soil and vegetation) in Sri Lanka. Rashmitha Diwayanjalee revealed through her study that NO₃⁻ concentrations were increased in tested locations during the evaluated period and that environmental parameters like pH, BOD, COD, and Cl⁻ showed a significant correlation with rainfall, time as well as the sampling location. The session suggested comparing the obtained results with the standard water quality measurements for further clarification.

Meanwhile, R. A. M. Ranasinghe indicated that the rainfall trend has decreased and the vulnerability has increased in the tested area during the southwest monsoon season. Their study also revealed that the most affected area within the Colombo district by the extremely wet days was the Kolonnawa Divisional Secretariat Division. However, the session suggested based on a few other recent studies that the southwest monsoon trend is seemingly increasing and to employ additional parameters in addition to wetness data. P. M. Withana has utilized land and air heat intensity indices to map land surface temperature gradients in the tested location. They have arrived at three main conclusions based on their study; vegetation deficit areas overlap with the high constructive areas of which the Colombo Harbor area was the most prominent, land surface temperature reduced when moved further away from the urban area, and despite the clear anticipation, there is no significant correlation between the air temperature and the land surface temperature. The session committee was highly impressed with their research and recommended continuing the study to gather data for a minimum period of a year at least while expanding the sampling sites to rural areas in order to validate the results. M. A. Gunawardena has done pioneering work in comparing the Global Warming Potential and soil organic content of conventional and organic farming based on pineapple cultivation through a life cycle assessment. Their study concluded that organic farming is the best method as it has shown a significant reduction in greenhouse gas emissions and an increase in soil carbon sequestration when compared to conventional farming. Session appreciated the comprehensive research work and encouraged them to expand the study to other crops as well.

Technical Session 9: Carbon management and climate change mitigation - I

Chaired by: Mr. Nasir Uddin (President, Global Climate change Foundation, Bangladesh)

Evaluated by: Dr. Thaddeus P. Lawas (University of the Philippines Los Baños, Philippines)

Author/s	Topic
Harini V. (Sri Venkateshwara College of Architecture, Hyderabad, India)	Sustainable Transportation Strategies to Mitigate Carbon Emission: Case of India
Ramachandran N., Dikshit O. (Indian Institute of Technology, Kanpur, India)	A Stacking Ensemble Learning Framework for Improved Tropical Forest Aboveground Biomass Retrieval from Multi-Sensor Data
Gaum T., Igugu H.O., Laubscher J. (Tshwane University of Technology, South Africa)	Climate Change in The Global South: Largest Role Players and Mitigation Strategies

During the session 9 climate change mitigation through carbon management was discussed. Asst. Prof V. Harini explained how transportation contributing to high carbon emission in India, increase of private transportation and its negative impact and stated that policy changes in transportation, use of cleaner fuel, move into non-motorized and public transport, include sustainable urban transportation strategies in urban transportation planning will reduce carbon emissions from the sector in considerable level. Then Naveen Ramachandran explained the satellite data and laser measurements from planes on improving above ground

biomass in tropical forests. T. Gaum explained how communities in the global south (under developed & developing nations) are becoming more vulnerable to climate change while global south is having the biggest urban growth in the world which will contribute to anthropogenic GHG emissions and therefore climate change in the future.

Technical Session 10: Impacts, hazards, risks and effective adaptation to climate change – II

Chaired by: Dr. Reet Kamal Tiwari (Indian Institute of Technology, Ropar, Punjab, India)

Evaluated by: Prof. Hemanthi Ranasinghe (University of Sri Jayewardenne, Sri Lanka) and Prof. Sardhane Dias, University of Colombo, Sri Lanka

Author/s	Topic
Zohar I. <i>(Tel-Hai Academic College, Israel)</i>	Heat Waves Induce Fluctuations in Soil Nutrients Solubility and Forms: Phosphorus, Nitrogen, and Organic Carbon
Gunawardena D.H., Wickramasingha D. <i>(University of Colombo, Sri Lanka)</i>	Climate Change and the Unequal Burden on Women and the Poor
Krishnapillai M.V. <i>(College of Micronesia-FSM, Yap Campus, Micronesia)</i>	Climate Change Adaptation Strategies for Internally Displaced Environmental Migrants in Yap
Salwa M., Tasnim A., Khan M.H., Islam M.R., Mashreky S.R., Moniruzzaman S., Koivisto J., Gustavsson J., Nyberg L., Rahman A.K.M.F., Harun A.Y.A., Haque M.A. <i>(Bangabandhu Sheikh Mujib Medical University, Bangladesh, Centre for Injury Prevention and Research, Bangladesh, Karlstad University, Sweden, Khulna University, Bangladesh)</i>	Climate Change-Related Mental Health Status among Coastal Populations: A Community-Based Survey in Bangladesh

Session 10 was also focused on the impacts of climate change and measures of adaptation and mitigation to it. I. Zohar mentioned that heat waves are increasing the phosphorus levels of soil which make it hard to grow vegetation, resulting in desertification which is a slow onset disaster due to climate change. Dilisha Gunawardena explained that the poor quality of housing structure of low income communities in Kalani river basin is suffering from frequent flooding and stated that the most impacted are women, elders, and children. The highlight of not only the session but all of the research paper presentations could be Dr. Krishnapillai's presentation which showcased the successful relocation and settlement development that happened in Yap Proper Island in the Pacific Micronesian State where the government relocated a fishing community who were suffering from sea level rise and sea erosion to a higher, barren land and developed a settlement now with fully grown trees and home garden farming which proves diversification is one of the best solutions to move poor, underdeveloped communities out of the devastating impacts of climate change. M. Salwa showed a different side of climate change effects to poor communities of the world which is "Eco-anxiety" due to the impacts

and resulted uncertainties due to climate change resulted extreme events through her study in Bangladesh.

Technical Session 11: Climate change, awareness, green initiatives and products – II

Chaired by: Dr. Akshar Tripathi (Indian Institute of Technology (IIT) Patna, India)

Evaluated by: Dr. Jagath Dewa Vidanagama (Accelerating Industries Climate Response, Sri Lanka) and Dr. Sena Peiris (University of Sri Jayewardenepura, Sri Lanka)

Author/s	Topic
Thakshila K.N., Chaminda G.G.T., Rupasinghe C.P. (University of Ruhuna, Sri Lanka)	Methodological Approach to Evaluate the Different International and Local Green Building Rating Tools
Abeyasinghe U.M., Munasinghe J.N., Sharma A. (University of Moratuwa, Sri Lanka, Morgan State University, USA)	Understanding Green Infrastructures for Effective Urban Planning
Perera A.L.W.M., Disanayaka D.M.M.G.J.M. (Rajarata University of Sri Lanka, University of Peradeniya, Sri Lanka)	Analyze the Awareness of the Young Generation on Climate Change in Sri Lanka
Vegos A (NOVA University of Lisbon, Portugal)	Online Climate Change Communication by Using Animation

The session focused on climate change awareness and green initiatives. U. M. Abeyasinghe presented a drafted definition of green infrastructure for the lack of a better-articulated definition in the field. She has employed GI mapping and a questionnaire for the study and the session suggested including the floating population in tested areas in addition to the resident population. A. L. W. M. Perera has conducted an online survey in analyzing the awareness within the university community. Their research revealed that all the participants were aware of climate change. However, only 80% were aware of mitigation while 59% has not participated in any form of awareness programs and thus through their research suggested conducting more practically oriented awareness initiatives. The session committee respectfully agreed with the recommendations and also suggested expanding the study beyond the scope of intellectuals in the university community and to include the general public as well. Meanwhile, A. Vegso discussed the effective climate change communication in online platforms using animation to overcome problems like language barriers and to reach the vast majority. She suggested that videos are the most guaranteed method to reach a wider audience with the support of the evidence collected. The committee was extremely impressed and appreciated the timely need for the research and recommended comparing the change in motivational levels of the audience depending on the mode of communication and investigating the time taken to deliver a message to the audience in various online communication methods. K. N. Takshila has used different currently available local and international building rating tools and compared them using newly defined common macro-areas. Their research revealed every tool has given high priority to energy and recommended setting global benchmark parameters such that a common platform is created for building ratings. The session appreciated the work and suggested expanding the research using more tools and including more test samples.

Technical Session 12: Carbon management and climate change mitigation – II

Chaired by: Prof. Hemanthi Ranasinghe (University of Sri Jayewardene, Sri Lanka)

Evaluated by: Prof. Christina Shanthi De Silva (The Open University of Sri Lanka)

Author/s	Topic
Nilupuli M. D., Lokupitiya E. Y. K. <i>(University of Colombo, Sri Lanka)</i>	Soil Carbon Stocks in Home gardens of Low Country Wet Zone, Sri Lanka: A Case Study in Kalutara District
Aberathna W.S.S.L., Perera P.W.D.N., Lakmali W.A.S, Senanayake F.R., De Zoysa D. And Weerakkody W. J. S. K. <i>(Earth Restoration (Pvt). Ltd, Sri Lanka, Wayamba University of Sri Lanka, Sri Lanka, University of Peradeniya, Sri Lanka)</i>	Soil Carbon Sequestration Potential in Analog Forests, Up Country Sri Lanka, Opportunities to Access Global Carbon Market as an Alternative Green Economic Strategy to Sri Lankan Economy
Somarathne E.A.S.K., Gunathunga M.W. and Lokupitiya E. <i>(University of Colombo, Sri Lanka)</i>	Prediction of Per-Head Carbon Footprint Through Mindfulness
Chivunga J.N., Lin Z. and Blanchard R. <i>(Loughborough University, United Kingdom, Malawi University of Science and Technology, Malawi)</i>	Power Systems Resilience Enhancement: A Review of Operational Enhancement Approaches

The technical session 12 focused on climate change mitigation through soil carbon management. M.D. Nilupuli said that home gardening agroforestry system is a sustainable solution to climate change through better land use management. Snduni Somarathne elaborated the importance of mindfulness in day to day life in reduction of per head carbon footprint of individuals which was a real eye opener for the audience. J.N. Chivunga explained about the distructions to the power systems in Malawi due to the increased frequency and intensity of cyclones which happens due to climate change.

Technical Session 13: Technology transfer, law and innovative solutions to climate change

Chaired by: Dr. Sena Peiris (University of Sri Jayewardenepura, Sri Lanka)

Evaluated by: Dr. Jagath Dewa Vidanagama (Accelerating Industries Climate Response, Sri Lanka)

Author/s	Topic
Hall I.M., McDonald A., Salazar E., Kostka W., Terk E. and Gómez Serrano J.R. <i>(Island Sustainability Institute, Sophia University, Japan, Micronesia Conservation Trust, Federated States of Micronesia, The Nature Conservancy Micronesia and Polynesia Program, Federated States of Micronesia, Facultad de estudios Ambientales y Rurales, Pontificia Universidad Javeriana, Colombia)</i>	Incorporating Nature-Based Solutions into Climate Policy for Small Island Developing States
Gunasekera K.R., and Weliange W.S., <i>(Climate Fact Checks, Fact Crescendo, Sri Lanka, Thrailokyavijaya (PVT) Ltd, Sri Lanka)</i>	Legalizing Cannabis Cultivation in Sri Lanka - An Implication to Combat Climate Change
Somaratna, K. C. <i>(Somaratna Consultants (Pvt) Ltd, Sri Lanka)</i>	Highway Solarization as a Solution for Climate Change

The session highlighted technological transfer, legal aspects, and innovative solutions regarding climate change. I. M. Hall presented on incorporating nature-based solutions into climate policy with a special focus on small island developing states and elaborations on the Pohnpei Climate Change Action Plan. Their study suggested taking the proposed methodology across the countries and share with the national policy advisors. K. R. Gunasekara revealed through her study Many advantages of the cannabis plant in economical as well as climate change-mitigation aspects and stressed the pros and cons of legalizing its cultivation. The session committee appreciated the timely topic and suggested expanding the research into finding other plants which have similar benefits but have not yet been discussed. Meanwhile, K. C. Somaratna indicated that the extensive road tar-coated road system had highly influenced global warming and thus climate change. The study proposed a method of introducing solar panels to highway roads and harvesting solar power as a sustainable energy source.

Technical Session 14: Global warming, agriculture and food security – III

Chaired by: Prof. Abel Aderemi Adebayo (Modibbo Adama University, Nigeria)

Evaluated by: Dr. Yiu Fai Tsang (The Education University of Hong Kong, Hong Kong)

Author/s	Topic
Salazar E., McDonald A., Hall I., and Gómez J.R. (Sophia University, Japan, Island Sustainability Institute, Japan, Javeriana University. Bogotá, Colombia)	Resilience to Climate Change in Small Scale Food Production Systems: Insights from Pacific and Caribbean Tropical Islands
Vito D. (GCSAYN Country coordinator, Italy)	Preliminary Analysis of Agros-Mart Survey Data for the Assessment of Small Farmers Needs for Climate Smart Agriculture Implementation
Gregorio K., Guzman Y. and Alam Z.F. (De La Salle University, Manila, Philippines)	A Systematic Review on the Association Between the Climatic Factors and the Prevalence of Disease in the Philippines and other Southeast Asian Countries
Manasa M., Arulmalar Ramaraj (Sri Venkateshwara College of Architecture, India, Sathyabama Institute of Science and Technology, India)	Urbanization and Its Impact on Food Security
Aiswarya S., Padaria R.N. (College, Muzaffarnagar, U.P, India, Indian Agricultural Research Institute ,India)	Assessing the Adaptation Strategies of Indigenous Communities of Biosphere Reserves and Heritage Zones: A Multi-Criteria Decision-Making Model

Technical session 14 discussed on how food agriculture & security is impacted by global warming and climate change. Erika Salazar explained how small island nations in Caribbean and Pacific West are using agroforestry and home gardening as an alternative income source in climate resilience building projects through diversification of livelihoods. Dominic Vito explained how small holder farmers who plan their tilling, seeding and harvesting based on traditional climate pattern are effected by uncertainties in climate variability. He elaborated how the use of technology can help to increase the resilience in climate smart agriculture methods. Zeba Alam explained about the increased health impacts of climate change such as respiratory and vector borne diseases. S. Aiswarya in her research presentation elaborated how indigenous communities in nature reserves and world heritage zones of India, who are totally depending on the nature in their daily life is affected by climate change and how their adaptation to climate change could achieved.

Technical Session 15: Climate change: mitigation, measurements, modelling and predictions – III

Chaired by: Prof. Maxim Shoshany (Israel Institute of Technology, Israel)

Evaluated by: Prof. (Mrs.) Christina Shanthi De Silva (The Open University of Sri Lanka)

Author/s	Topic
Subramaniyam C. and Rajapakse R.L.H.L. (University of Moratuwa, Sri Lanka)	Variants of Recurrent Neural Network Models for Real-Time Flood Forecasting in Kelani River Basin, Sri Lanka
Dilhane V.G.S., Kumari M.A.K., Weeranayake W.M.S.K. (National Building Research Organization, Sri Lanka)	Quantification of Rainfall Threshold Limit for Rain Induced Cutting Failures During South Western Monsoonal Rain Period - A Case Study at Nagoda, Galle, Sri Lanka
Tripathi A., and Tiwari R.K. (Indian Institute of Technology (IIT) Patna, Bihar, India, Indian Institute of Technology (IIT) Ropar, Punjab, India)	Assessment of Climate Change Induced Drought Conditions in Southern Bihar Region of India: A Multi-Sensor Remote Sensing Approach

Use of advanced modeling and simulation in climate variability predictions and forecasting of future climate was well showcased in the technical session 15 through studies on heavy rainfall and floods in Sri Lanka and India. Cabila Subramaniyam explained about her findings on the use of Neural Network (NN) Flood Forecasting in Kalani river basin of Sri Lanka while Dr. A Tripathi explained how he used satellite data for model forecasting of the floods in Gaya district in Bihar state of India. V.G.S. Dilhani elaborated on the changing rainfall patterns in Nagoda area of the southern province of Sri Lanka. All three researches showed that intensities and frequency of extraordinary heavy rains has been increased in the recent past as a result of climate change.

Technical Session 16: Climate change: mitigation, measurements, modelling and predictions – IV

Chaired by: Dr. Henry Odiri Igugu (Tshwane University of Technology, South Africa)

Evaluated by: Dr. Shiromanee Jayawardane (Department of Meteorology, Sri Lanka) and Dr. Yiu Fai Tsang (The Education University of Hong Kong, Hong Kong)

Author/s	Topic
Baldovino K.C.D., Cinco D.D.P., and Dela Peña F.B (Mapúa University, Philippines)	Modeling the Impacts of Sea Level Rise on Changing Land-Use/Land Cover (LULC) in Baler, Aurora using Sleuth: A Cellular Automata Model
Shaima Shawqi Almeer (National Space Science Agency, Bahrain)	Surveillance of NO ₂ Via Spaceborne Sentinel - 5p Satellite Across the Kingdom of Bahrain
Salihu A. C., Musa M., Ubachukwu N. N., Mshelia A. M. (Nigerian Army University Biu, Nigeria, Agricultural Research Council of Nigeria, Nigeria)	Temporal Analysis of Greenhouse Gases (GHGS) Emissions Over Nigeria in the 21st Century

Arya P.S., Chander S. and Rajina S.
(CCR(PG) College, Muzaffarnagar, UP, India, ICAR-National Research Centre for Integrated Pest Management, India, Indian Agricultural Research Institute, India)

Effect of Climate Change on Rice Leaf Folder
 (Cnaphalocrocis medinalis) Population

This session highlighted rapid as well as slow onset impacts of climate change and the use of model studies in predicting those events. K.C.D. Baldovino explained the impacts of sea level rise in the Philippines and how modeling used to predict sea level rise. Shaima Shawqi Almeer explained how satellite data can be used in effectively analyzing air pollution in Bahrain. A.C. Salihu also explained about his statistical analysis on the GHG emissions in Nigeria. Finally P.S. Arya elaborated her study on climate change's effect on the productivity of rice through the growth and expansion of the pest known as the Rice Leaf Folder with the global temperature rise. Outcome of the session was the climate change would drastically hamper the global food production and food security with major crop failure events due to multiple effects of global warming and climate variations.

Special Session

Chaired By: Mr. Sena Peiris (Former CEO, National Cleaner Product Centre, Sri Lanka)

Evaluated By: Dr. Jagathdeva Vidanagama (Chief Technical Specialist, Accelerating Industries Climate Response in Sri Lanka)

Author/s	Topic
Wickramathilaka H. M. K. D., Amarasinghe A. A. A. P., Bandara J. M. T. K., Ekanayake J. B., Godaliyadda G. M. R. I., Ekanayake M. P. B., Herath H. M. V. R. <i>(University of Peradeniya, Sri Lanka)</i>	Remote Sensing-Based Pandemic Risk Assessment in Urban Environments: A Case Study with COVID-19 Experience
Gunasekara K. R., Kudavidanage E. P. <i>(Climate Fact Check, Fact Crescendo, Sri Lanka; Sabaragamuwa University, Sri Lanka / Tropical Ecosystem Research Network, Sri Lanka)</i>	A Swot Analysis of Climate Change Education at the School Level in South Asia
Lane H., Pokutnia O., Otto P., Farias A. R., Wezepoel <i>(Brandenburg Medical School, Germany; Hei-Lab, Lusófona University, Portugal; Wageningen University & Research, Netherlands)</i>	Carbon Labeling of Restaurant Meals: A Virtual Design Experiment
Bulathsinhala S. S., Nair H., Dineshkanth B., Das P. j. <i>(Climate Fact Check, Fact Crescendo, Sri Lanka; Aranayk (A Scientific and Industrial Research Organization of India))</i>	Importance of Climate Resilient Health System in Sri Lanka

The session included several special presentations regarding a variety of topics including assessment, mitigation, and awareness of climate change. H. M. K. D. Wickramatilaka assessed the risk of a pandemic concerning COVID-19 by using population heat maps and building coverage maps of the Kandy city area while suggesting the extension of the study to different aspects of climate change. The committee appreciated the work and suggested taking the necessary steps to translate the found data into policy-making in form of a standard index. K. R. Gunasekara analyzed climate change education incorporated school curriculums in South Asian countries and concluded that it is lower than the expected levels while suggesting the need for an updated curriculum supported with the political, economical, social, technical, environmental, and legal facts. The session committee acknowledged the recommendations. Meanwhile, H. Lane presented persuasive communication to change consumer behavior to pursue products and services in the food industry that have a lesser contribution to climate change in general. S. S. Bulathsinhala described the significance of climate-resistant health systems with respect to vector-borne diseases including Dengue and Leptospirosis. The study proposed to combine research, awareness, communication, and zoning while meeting the solution to discussed research question.

POSTER PRESENTATION SESSION

P1	<p>Debunking and Prebunking Climate Change Related Misinformation and Disinformation Through A Standard Scientific Method.</p> <p>Borkotoky, M. and Das, P.J. <i>(Climate Fact Checks, India, Aaranyak Scientific, Industrial and Environmental Research Organization, India)</i></p>
P2	<p>A Study on Climate Change and its Impact on India's Sustainable Growth and Human Security</p> <p><i>Manash Pratim Borah (Indira Gandhi National Open University, India)</i></p>
P3	<p>The Need of Teaching the Health Effects of Climate Change in Medical Schools</p> <p><i>Zoltan A. (George Emil Palade University of Medicine, Romania)</i></p>
P4	<p>Rainwater Harvesting Systems, Climate Change Adaptation, and Sustainable Development Goals: Lessons Learned from Sri Lanka</p> <p>Bellanthudawa B.K.A., Udayanga K.A.S., Nawalage N.M.S.K., Perera I.J.J.U.N., Sandaruwan R.D.C. <i>(University of Ruhuna, Sri Lanka, University of Concordia, Montreal, QC, Canada Sri Lanka Wildlife Conservation Society, Kalpitiya, Sri Lanka)</i></p>
P5	<p>Environmental Degradation and Climate Issues in Sri Lanka</p> <p>Kariyawasam R., Goyal R., Sandakelum N., Bulathsinhala S.S., Dharmasiri D.S., Rev Kariyamadiththe, Gurusinghe G. <i>(Center for Environment and Nature Studies, Sri Lanka, NICMAR University, New Delhi, India)</i></p>
P6	<p>Debunking Myths & Misconceptions Related to Renewable Energy Sector</p> <p>Bulathsinhala S.S., Hettiarachchi K.K. and Das P.J. <i>(Climate Fact Checks, Fact Crescendo, Sri Lanka Aarnayak Scientific and Industrial Research Organization of India)</i></p>
P7	<p>Sustainability toward Global Seasonal Changes from Ayurveda Prospect - A Review</p> <p>Dushmantha W.K.T. and Wimalasiri Y.S.G. <i>(University of Colombo, Sri Lanka)</i></p>

CONFERENCE CLOSURE AND AWARD CEREMONY

Closing Speeches:

ICCC 2023 conference chair Prof. Erandathie Lokupitiya gave a special closing speech with thanking the organizers, participants, all the resource providers in workshops & speeches, Friedrich Naumann Foundation for Freedom and all other parties supported to the success of the 2 day conference. The vote of thank was given by the conference convener Mr. Isanka P. Gamage who believed the attendees gained new knowledge and build valuable networks among both local and international colleagues and experts. While offering TIIKM's support in research publications he thanked all the key note speakers and other presenters, evaluators, session chair and panelists of the panel discussion, virtual and physical presenters, workshop facilitators, volunteers, Hotel Taj Samudra staff and the members of TIIKM for the successful conclusion of ICCC 2023. Mr. Gamage very specially thanked Friedrich Naumann Foundation for Freedom for their sponsorship towards the success of the conference. Special token of appreciation was presented to Prof. Lokupitiya for her invaluable commitment and leadership extended to the success of ICCC 2023. With that Mr. Isanka P. Gamage officially conclude the 7th International Conference on Climate Change.

ICCC 2023 Awards:

Best Social Media Influencers:

1. Agota Vegos - Portugal
2. Shaima Al Maar - Singapore
3. Uvin Jayalath - Sri Lanka

Overall Best Student Presentation:

M. A. Gunawardena (University of Colombo, Sri Lanka)

Global Warming Potential and Soil Carbon Storage of Conventionally and Organically Grown Pineapple in Gampaha District of Sri Lanka

Overall Best Presentations – Virtual:

Dr. Zeba F. Alam (De La Salle University, Philippines)

A Systematic Review on the Association between the Climatic Factors and the Prevalence of Disease in the Philippines and other Southeast Asian Countries

Meric Yilmaz (Atilim University, Turkey)

Investigation of Daytime and Nighttime Temperature Trends over Turkey

Tariene Gaum (Tshwane University of Technology, South Africa)

Climate Change in the Global South: Largest Role Players and Mitigation Strategies

Overall Best Presentations – Physical:

Cabila Subramaniam (University of Moratuwa, Sri Lanka)

Variants of Recurrent Neural Network Models for Real-Time Flood Forecasting in Kelani River Basin, Sri Lanka

E.A.S.K Somarathne (University of Colombo, Sri Lanka)

Prediction of Per-Head Carbon Footprint through Mindfulness

M.V. Krishnapillai (College of Micronesia-FSM, Yap Campus, Micronesia)

Climate Change Adaptation Strategies for Internally Displaced Environmental Migrants in Yap