NEWSLETTER

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Editorial

Dear BRITAE and worldwide readership,

This is my first newsletter appearance as a member of the BRITAE family. I'm greatly honored to serve in this capacity over the last two years as it allows me to contribute towards building resilience in tropical agro-ecosystems.

BRITAE, by its very nature, is perhaps one of the most diverse academic associations for development research characterized by many differences among our members, including, but not limited to, functional disciplines, gender, countries of origin, ethnicity, economics at different stages of technological development, stages of career development and research orientation.

This 3rd issue of the BRITAE newsletter brings three main information sections. The first key thematic area is project progress reporting, team BRITAE having successfully completed the interim report and the establishment of the SAR Centre, the central platform linking partner universities and stakeholders. Second in line was capacity building and professional development programs designed for membership and partner universities. Academics and researchers of partner institutions shared their knowledge and experiences among the membership and the process was immensely helpful in building the capacities of the BRITAE team. The third section of the newsletter is devoted to sharing the achievements of the project partners. Achievements on research, publication, knowledge sharing endeavors enrich the capacity of the project team and enhance the moral wellbeing of the team.

Wishing you all health and safety first in the year ahead!

Professor Achini de Silva
*Professor in Agribusiness Management,
Dept.of Agribusiness Management,
Faculty of Agricultural Sciences,
Sabaragamuwa University, Sri Lanka*

BRITAE PROJECT
INTERIM REPORT SUBMITTED

The BRITAE team of the University of Ruhuna, as project lead, successfully compiled and submitted the interim report of the BRITAE project to the European Commission on October 15th, 2021, with the collaboration of the other partner and program country universities. The report included detailed information on the project summary and horizontal issues, award criteria, impact and sustainability, and statistics and indicators.

Tables of Achieved and Planned Activities were prepared for each work package of the BRITAE project with the collaboration of the project's partner and program country universities. Budget tables were developed collaboratively for each project partner university and approved by the beneficiary institution's legal representative. The University of Ruhuna prepared the final financial statement for the BRITAE project by combining all of the budget tables from each project partner university. In addition, the Declaration of Honor, Dissemination/Exploitation Plan, Quality Assurance Plan, and Request for Payment were submitted to the European Commission along with the BRITAE project's interim report.

Finally, the prepared interim report was approved by the BRITAE project's Steering Committee at the Steering Committee meeting held on October 12, 2021, as an online event. The report was successfully submitted to the European Commission with the approval of all project partner universities.

Compiled by University of Ruhuna
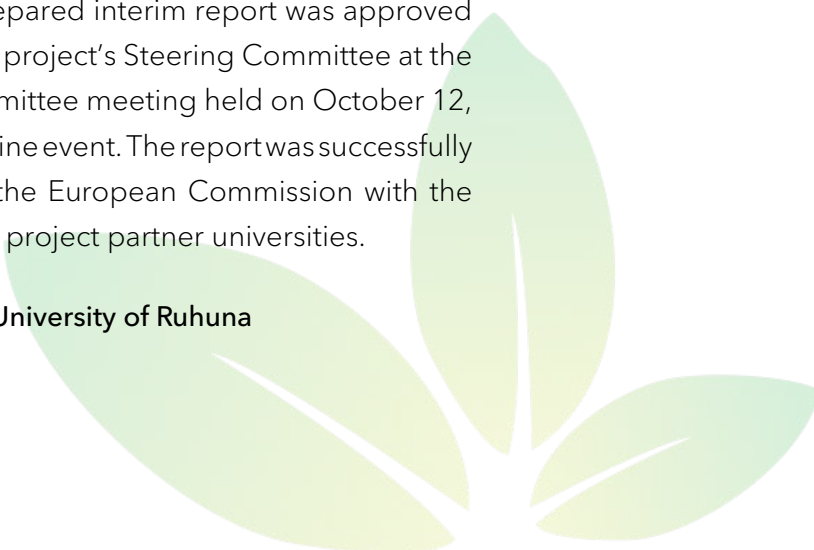
ESTABLISHMENT OF
SAR CENTRE

The innovative Smart Agroecosystem Based Resilience Centre (SAR Centre) was developed to provide teaching materials, learning materials, evaluation procedures, assignments and other required materials for courses. A web-based system was developed to deliver information about curricula - this is updated frequently with new scientific advancements, technologies, etc., which relate to Agroecosystem resilience. The SAR Centre can be accessed from the BRITAE project webpage: **https://www.britae.lk/**

The SAR Centre enables and promotes lifelong learning by making study materials accessible outside the traditional classroom environment to various parties within the society, from students and lecturers to practitioners and policy makers. It ensures not only feedforward (information/ knowledge from centre to the beneficiaries and stakeholders), but also feedback (from beneficiaries and stakeholders to the centre). The SAR Centre focuses on three different micro, meso and macro levels (Fig. 1):
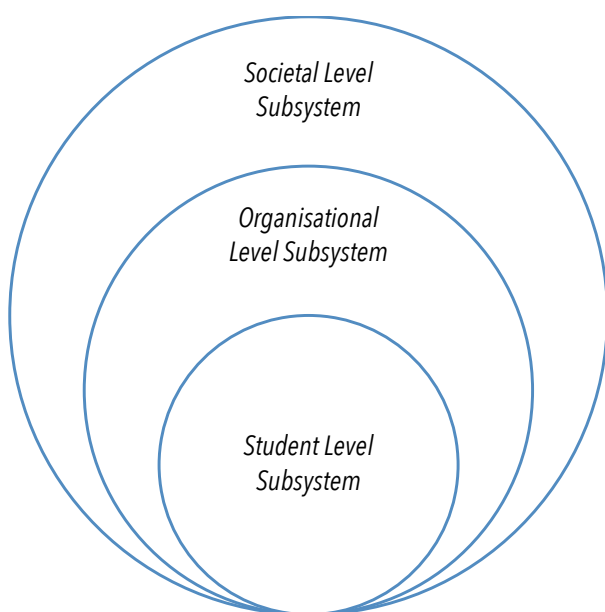

Fig. 1. The SAR Centre levels

- Student Level Subsystem (micro level). The learner level takes place through demand-driven processes of a student-centred intelligent tutoring system education approach that empowers and places the student in a central and active position. The Student-Level Subsystem moves away from traditional teaching assistance. It allows students to build and enhance knowledge and skills, and adapt to change.

- Organizational Level Subsystem (meso level). The Organizational Level Subsystem is aimed at executives working in organizations which relate to the agroecosystem. This will enable organizations to modernize their capacity by fostering change within their complex system of policies, systems, effective methods of management and revenue control, procedures, regulations and organisational culture to improve agroecosystem resilience.

- Societal Level Subsystem (macro level). The Societal Level Subsystem is aimed at administrators working in ministries in relation to agroecosystems. The Societal Level Subsystem will make it possible to adapt the BRITAE values system of a society, its body of laws and policies, the system of governance, which are all elements that impinge on the ability of students and organizations to develop further their capacity and transform. The main aim is to support the establishment of a more interactive public administration that learns equally from its actions and from feedback it receives from the population at large.

The SAR Centre provides for upholding a rational, peak learning productivity zone for some specific student for as long a period as possible, according to the Yerkes–Dodson Law. The Yerkes–Dodson

law is an empirical relationship between arousal and learning performance. The law dictates that learning performance increases with physiological or mental arousal, but only up to a point. When levels of arousal become too high, performance decreases. The lecturer who uses the data and information supplied by SAR Centre and neuro decision matrices for analyses is better able to know each individual student (i.e., to compile a student's academic performance-concept) as well as the entire group of students being taught. Analogically, a student can better know him/herself by contemplating the data that the SAR Centre accumulates in order to form a self-concept of academic performance. Such better self-knowledge is desirable, so that a student can be studying within a peak learning productivity zone as much as possible as well as attempting to generate a rational learning environment (in terms of personal, behavioral and environmental dimensions). The analysis of such information in an integrated manner can achieve this.

Five major components/subsystems have been identified for the development of the SAR Centre:

1. Adaptive MOOCs.
2. Big Data Mining;
3. Affective Tutoring Subsystem;
4. Adaptive Biometric Examination Subsystem;
5. Access to Open Source Material.

Adaptive MOOCs

The Adaptive MOOCS subsystem is designed to provide the learning material according to the student's needs. Material can be presented with analysis of student emotions (or without). A questionnaire is developed in the subsystem to determine what training material to provide by keywords. If a student's emotions are analyzed, the material is presented according to their level of interest. If neutral emotions prevail (over 90%) and the subsystem detects that the user does not find the material interesting, the subsystem switches to different materials.

Big Data Mining

The Big Data mining subsystem accumulates BRITAE data and information from multiple locations and is able to make an integrated analysis of the following data and information from multiple locations: agriculture, resilience, climate change, best practices, human influences, etc.

The phases of integrated CRISP-DM (Cross Industry Standard Process for Data Mining) and SEMMA (modelling tasks of data mining projects) data mining process models and related tasks in BRITAE project are the following: understanding of Agroecosystem Based Resilience; data understanding; data preparation; sampling; exploring, modifying, modelling, evaluation, deployment, recommendation. The sequence of the above phases is not strict and moves back and forth between different phases as required. A data mining process continues after a solution has been deployed.

Affective Tutoring Subsystem

The Affective Tutoring Subsystem integrates the self-assessment measurement of students with biometric (facial expressions analysis) and intelligent methodologies and technologies.

All facial expressions require consideration to determine the learner's emotions and wishes. The Affective Tutoring Subsystem can analyze the facial expressions of a learner while he or she is learning a module. An analysis of the learner's facial expressions leads to better control over alternative sequences of the module. This subsystem can consider the learner's emotions (happy, sad, angry,

surprised, scared, disgusted and neutral) and make a real-time rational choice of learning materials. The analysis of a learner's facial expressions can indicate which learning materials the learner might prefer at the moment.

The Affective Tutoring Subsystem creates a rational version of a learning process tailored to a specific student, taking into account such factors as how much the studies are interesting or difficult and the level of stress (with the help of biometric technologies). The SAR Centre includes an automatic function that takes module topics and compiles an optimal set of personalized materials for a specific student. It constantly changes the learning subject with regard to situational and individual interest and most suitable learning style for a specific lecturer, learner and other stakeholder. The SAR Centre includes an automatic function (by using the historical statistical data defining student individual interests (student's level of knowledge, student's learning style, student's levels of interest in learning and learning productivity) that takes module topics and compiles an optimal set of personalized materials for a specific student.

Innovative assessments are often intended to motivate students to take more responsibility for their own learning, to make assessment an integral part of their learning experience, and to embed it in activities that stimulate students' abilities to create and apply a wide range of knowledge, rather than simply engaging in acts of memorization and basic skill development.

The Affective Tutoring Subsystem is composed of a questionnaire to select any topics students want to see. Material can be presented according to analysis of student emotions (or not). When students select the topics they want, they will be presented with video materials. When the student loses interest in those video materials

and neutral emotions exceed 90%, the subsystem automatically switches to the next video to boost the user's interest.

Adaptive Biometric Examination Subsystem

When students log into the subsystem, they can see three exam quizzes:

1. Climate Change: Social Science and Policy Perspective
2. Master and Post Graduate Education and Training in Multidisciplinary Teams Implementing The Energy Performance of Buildings Directive and Beyond
3. Biometrics and Intelligent Technologies.

When the examination starts (Fig. 2), the student will get questions to answer (1). A camera shows the student's image (2) in the left bottom corner of the examination window. The right panel shows the student's emotions (3). The upper left panel shows the emotions visualised in a chart.
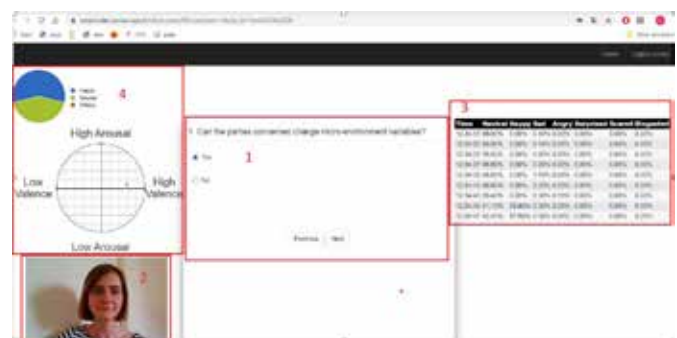

Fig. 2. An examination in progress.

When the quiz is over, the subsystem shows the analysis of the user's emotions for each question (Fig. 3) and the overall assessment of the student's psychological state.
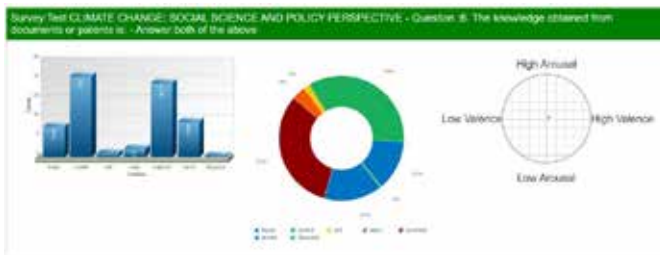
Fig. 3. The analysis of the user's emotions for each question

Access to e-sources

The SAR Centre offers open-source videos, simulators (calculators and software) and case studies from the best universities around the world to enhance the module. Students are able to use these simulators (calculators and software) to make their calculations and simulate various scenarios for their homework, term papers and final theses. Students are also able to take part of their examination from the videos they liked. Students themselves are also able to contribute materials to the module's database of videos, calculators and software. The open source simulators (calculators and software) are used for BSc/specialists, MSc and PhD adaptive MOOCs development.

Compiled by
Vilnius Gediminas Technical University

BRITAE WP2
CAPACITY BUILDING TRAINING

Capacity building of staff is a key objective of Work Package 2 of the BRITAE project. Towards fulfillment of this, and the desire to share knowledge between partners and colleagues, a programme of training has begun.

Hosted by the University of Central Lancashire, the programme provides regular opportunities for learning (for both Academic and/or Support staff). The training needs have been identified through a pedagogic survey analysis conducted by Sabaragamuwa University of Sri Lanka. Based on different institutional expertise, each training topic/session has been assigned to different BRITAE partners. The training sessions are being delivered via Microsoft Teams. The aim of the training sessions is to offer a friendly and interactive forum for listening to expert speakers, watching useful resources being demonstrated, and exchanging ideas among the BRITAE partners and their wider university networks. Some of the speakers will be familiar faces - colleagues of ours with international reputations. Others will be external specialists, allowing us to not only provide additional insight, but disseminate the work of the BRITAE project to other institutions and sectors.

The first session was held on September 14 and saw Louise Smith, Principal Subject Librarian at UCLan, share 'Best Practice on Accessing and Using Library Resources'. After Louise had offered many useful suggestions and examples, we welcomed Dr Sue Folley, Academic Development Advisor at the University of Huddersfield. Dr Folley led us through an informative and interesting session on 'Preparing for Teaching in an Online or Blended Learning Environment'. Delegate responses to the event were very positive, with some much-appreciated kind words for our speakers. In what will be a regular feature, the

sessions were recorded and the recorded video will be sent along with the presentation slides to our BRITAE lead (University of Ruhuna). These will be uploaded to the SAR Centre resource base so that these can be available to partners who may wish to access them.

Consortium of Sri Lankan Academic Libraries (CONSAL)

University of Central Lancashire

Preparing for Teaching in an Online or Blended Learning Environment

Dr Sue Folley - Academic Development Advisor
University of Huddersfield

On September 28, Professor Tiia Ruutman from Tallinn University of Technology, shared her expert knowledge of 'Teaching and Learning Techniques', accompanied by Dr Ezri Hayat of Teesside University, who guided us on 'Massive Open Online Courses – Global Learning in Practice'. The number and range of attendees was, as with the first events, encouraging and again we received lots of thanks for the speakers who kindly gave up their time to support the programme.

Teaching and Learning Techniques

the subjects of assessment and evaluation, from both a Sri Lankan and a UK perspective, joint programme management, and other areas relevant to collaborative course development and academic interests. We welcome engagement with partners on this programme and look forward to maximizing the opportunity for capacity building. Also you can contact Dr Andrew Carmichael at UCLAN in case of any queries, or suggestions.

Compiled by University of Central Lancashire

The next session, on October 26, saw a trio of experts from our partner institution Vilnius Gediminas Technical University. Professors Arturas Kaklauskas and Natalija Lepkova, and Dr Ieva Ubarte guided us through the background, key messages, and legal framework of joint programmes, before Professor Champika Liyanage spoke on academic misconduct, specially touching upon the difficult subject of plagiarism. If scheduling commitments prevented colleagues from attending any of these sessions we encourage you to access the recordings via the SAR Centre.

The sessions are advertised a number of weeks in advance with a usual start time of 8am UK (12.30pm Sri Lanka). Consisting of up to two sessions lasting no more than two hours each, they are aimed to best fit with colleagues' existing commitments and schedules. Forthcoming events will cover

PROFESSIONAL
DEVELOPMENT WORKSHOP

On the 10th of September 2021, the final workshop under task 3.4 of work package 3, "Professional Development Workshop for Academics and Administrative Staff," was successfully held, with the valuable participation of several significant dignitaries as resource persons. The workshop lasted about 5 hours, beginning at 11 a.m., and 106 people participated in this online session.

Senior Prof. Sudas D. Wanniarachchi, Dean of the Faculty of Agriculture at the University of Ruhuna, gave the opening remarks. The presence and address of the Vice Chancellor of the University of Ruhuna, Senior Prof. Sujeewa Amarasena, added grace to the event. Dr. Sampath Punchihewa, Dean of the Faculty of Law at the University of Colombo, and Prof. Wasantha Seneviratne, Director of the Centre for the Study of Human Rights and Head of the Department of Public and International Law at the University of Colombo, led the opening session on "Legal Aspects of Handling Foreign Funded Research Grants." Senior Professor Champa M. Navaratne, Coordinator of the BRITAE project, delivered a valuable speech on "ERASMUS+ project administrative and financial procedures: European Union perspectives" in the following session. Senior Professor K.L. Wasantha Kumara, Director of the Centre for International Affairs (CINTA), University of Ruhuna, led the third session on the "Role of CINTA in Facilitating Foreign Collaborations."

Mr. K.A.R.S. Jayakody, Bursar of University of Ruhuna, gave a valuable presentation on "Administrative procedures and financial management of foreign grants in state universities." Mr. Russel Aponsu, Director (Planning) of Sri Lanka's Ministry of Higher Education, gave an informative presentation on "Implementation of Foreign Funded Projects" as the workshop's final session. The workshop provided valuable information that will be useful to academics as well as administrative staff.

Compiled by University of Ruhuna

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OTHER
BRITAE NEWS

WINNING THE BEST PAPER AWARD AT THE SEEDS CONFERENCE

BRITAE representatives won the best paper award at the Conference for Sustainable Ecological Engineering Design for Society (SEEDS). The paper was written by Asitha de Silva, Dilanthi Amaratunga, Richard Haigh, Rodrigo I.U., Hettiarachchi, D.H. and Champa M. Nawaratne. They presented the paper at the International Conference for Sustainable Ecological Engineering Design for Society (SEEDS), entitled "Involvement of higher education institutions when promoting agroecosystems resilience", on February 16th 2021 and developed it into a full paper.

SEEDS International Conference 2021
Sustainable Ecological Engineering Design for Society

LEEDS SUSTAINABILITY INSTITUTE

DUBLIN

University of Suffolk

UWE Bristol

Education and Sustainability Award

Awarded to:

Asitha de Silva, Dilanthi Amaratunga, Richard Haigh, Rodrigo I.U., Hettiarachchi, D.H. and Champa M. Nawaratne

Professor Chris Gorse
On behalf of SEEDS 2021 Committee

Professor Lloyd Scott

COMMEMORATION OF THE INTERNATIONAL DAY FOR DISASTER RISK REDUCTION

Prof Dilanthi Amaratunga and Prof Richard Haigh contributed as resource persons representing the University of Huddersfield to commemorate the International Day for Disaster Risk Reduction (IDDRR) on October 13th, 2021. In 2016, the UN Secretary-General launched "The Sendai Seven Campaign" to promote each of the seven targets over seven years. The target selected for 2021 is Target F: "Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions to implement the present Framework by 2030". In commemorating the IDDRR 2021, the Disaster Management

Centre (DMC), as the focal point for disaster risk management in Sri Lanka, organised a national commemoration programme in the form of a hybrid event. The theme of the event is "COVID-19 and systemic risks", which complements the IDDRR 2021 key objectives.

CONTRIBUTING TO THE COP26 - UNIVERSITY OF HUDDERSFIELD

Prof Dilanthi Amaratunga and Prof Richard Haigh added their inputs at the UK Research and Innovation Session in the COP26 event on November 1st 2021. The session organisers invited leading researchers and innovators working with UKRI funding schemes to express their expectations out of the COP.

Professor Richard Haigh representing the Global Disaster Resilience Centre (GDRC) at the University of Huddersfield, stated, "I very much hope that COP26 will show the importance of working together to address these challenges on the climate crisis and will accelerate action towards more effective collaboration between scientists at universities like mine, along with governments, businesses and civil societies."

Professor Dilanthi Amaratunga also represented the GDRC and stated, *"The ongoing Covid-19 outbreak is an unprecedented event in modern human history and is global, but its prevention and preparedness are local. We argue that mechanisms and strategies for disaster resilience can enhance preparedness for early and better recovery that prevents the emergence of new risks to epidemics such as Covid-19. One thing I hope that comes out of COP: new research and governance and a new model for disaster risk management to be encouraged. It has long been accepted that even in individual events, multiple pieces of cycle unfold simultaneously."*

LAUNCH OF THE MULTI-HAZARD EARLY WARNING BOOK

Members of the Huddersfield University, Prof Dilanthi Amaratunga, Prof Richard Haigh and Dr Nuwan Dias, edited the book entitled: Multi-Hazard Early Warning and Disaster Risks. The book consists of fully peer-reviewed 56 chapters across 889 pages. The book is available via this link: https://www.springer.com/gp/book/9783030730024. The editors have donated their copies to developing country libraries/users.
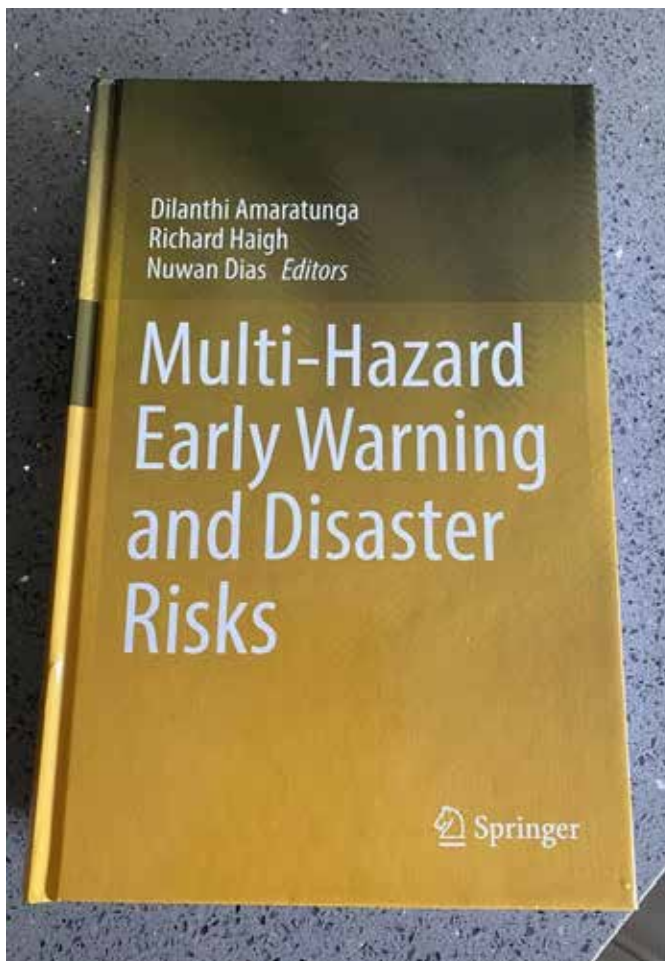
THE UNIVERSITY OF HUDDERSFIELD MEMBERS LED SEVERAL DISSEMINATION ACTIVITIES

The members of the University of Huddersfield displayed the project brochure and the BRITAE framework at the International Conference on Disaster Resilience Infrastructure (ICDRI), on the marketplace from 17-19 March 2021. In addition, an e-poster was displayed at the 5th Global Summit of GADRI, organised by the Research Institutes for Disaster Risk Reduction, Kyoto University, Japan, from August 31st to September 1st 2021.

Several keynotes were delivered by Prof. Dilanthi Amaratunga, representing the GDRC, the University of Huddersfield. Prof Amaratunga delivered a keynote on "Unmaking Disasters: Education as a Tool for Disaster Risk Reduction and Sustainable Development" at the 2nd International Symposium on Disaster Resilience and Sustainable Development" (DRSD-2021) 24-25 June 2021, organised by the Asian Institute of Technology. Prof Amaratunga also delivered a keynote on "Impact of Climate Change on Sustainable Development: Harmonising climate action with broader Sustainable Development Goals" at the International Knowledge Sharing Workshop on Climate change and Energy Efficiency for Sustainable Development, held from 12-17 June, 2021, organised by the Department of Civil Engineering, University of Moratuwa, Sri Lanka. Prof Amaratunga delivered another keynote on "Disaster Resilient Properties: Built Environment Discourse" at the International Policy Dialogue on Disaster Risk Reduction: Civil Engineering for a Disaster Resilient Society. The event was

organised by the Civil Engineering Council of India, together with the Asian Disaster Risk Reduction and Response Network from 19-21 March 2021. Prof Amaratunga delivered another keynote on "Sendai Framework 2015-30: Perceptions, Challenges and the Way Forward" at the Disaster Risk Governance Webinar Series which took place from 13-18 October 2020 in India, marking the International Day for Disaster Risk Reduction (IDDRR) to promote a global culture of Disaster Reduction. Prof. Dilanthi Amaratunga delivered an invited lecture on "Trends and Current Practices of Disaster Risk Reduction and Management", organised by the University of Peradeniya, Sri Lanka, during September 2020.

Compiled by University of Huddersfield