CApacity Building in Asia for Resilience EducaTion

Volume 1 Issue 3

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Photograph (above): CABARET team celebrate International Women's Day on the 8th March at the 1st CABARET capacity building workshop on multi-hazard early warning and coastal resilience, in Kandy, Sri Lanka, hosted by the University of Peradeniya

70 scientists gather for the first CABARET capacity building workshop, in Kandy, Sri Lanka

70 scientists from across Europe and Asia met in March 2018 for a four day workshop on multi-hazard early warning and resilience building in coastal communities.

Hosted by the University of Peradeniya, the event took place in beautiful surroundings of the historic city of Kandy, Sri Lanka.

The event aimed to strengthen the ability of staff at CABARET partner Universities to respond to their research needs in multi-hazard early warning and disaster resilience building in coastal communities. The workshop provided individuals and organisations with the skills, competencies and credentials needed to continue to pursue research, and to lead research at institutions in partner countries, aimed at reducing the impact of disasters.

This event was part of CABARET, a 36-month EU funded action that seeks to: build capacity for international and regional cooperation between Higher Education Institutes (HEIs) in Asia and Europe, and among Asian HEIs themselves, to improve multi-hazard early warning (MHEW) and increase disaster resilience among coastal communities.

The workshop offered a multi- and inter-disciplinary perspective on the topic and involved a series of keynote addresses and training, participation in an innovation hub aimed at promoting scientific cooperation and knowledge transfer in Higher Education within Asia, and between Asia and Europe on MHEW, and events to explore, promote and initiate opportunities for fruitful university partnerships with socio-economic actors in coastal communities.

Highlights of the workshop included:

- Keynote addresses by leading scientists and government representatives involved with multi-hazard early warning and resilience building, including non-academic institutions such as the Asian Disaster Preparedness Center, and the Federation of Sri Lankan Local Government Authorities.
- Participation in a study aimed at understanding the current status of multi-hazard early warning in the Asian region, including the interface between upstream and downstream event and information flow in early warning.
- Sandpit events aimed at developing multi-disciplinary and international research proposals to strengthen multi-hazard early warning and resilience building.
- Activities to promote peer-to-peer cooperation by bringing together experts, including academia, government and civil society, on MHEW issues.
- Training events to share good practices, expertise and capacities in assessing risks, developing sustainable monitoring and warning services, creating proper dissemination and communication systems, and coordinating with communities to increase response capabilities.
- Opportunities to develop proposals for funded short term scientific missions to CABARET partner institutions.

Keynote addresses

Dr Harkunti Rahayu, from the Institute of Technology Bandung, shared her extensive experience of working with communities to improve implementation of the tsunami early warning system, and spoke on the translation of science into to Tsunami Early Warning Policy Improvement: Experience of Padang City Indonesia. Professor Sarath Kotagama, Professor Emeritus and former head of

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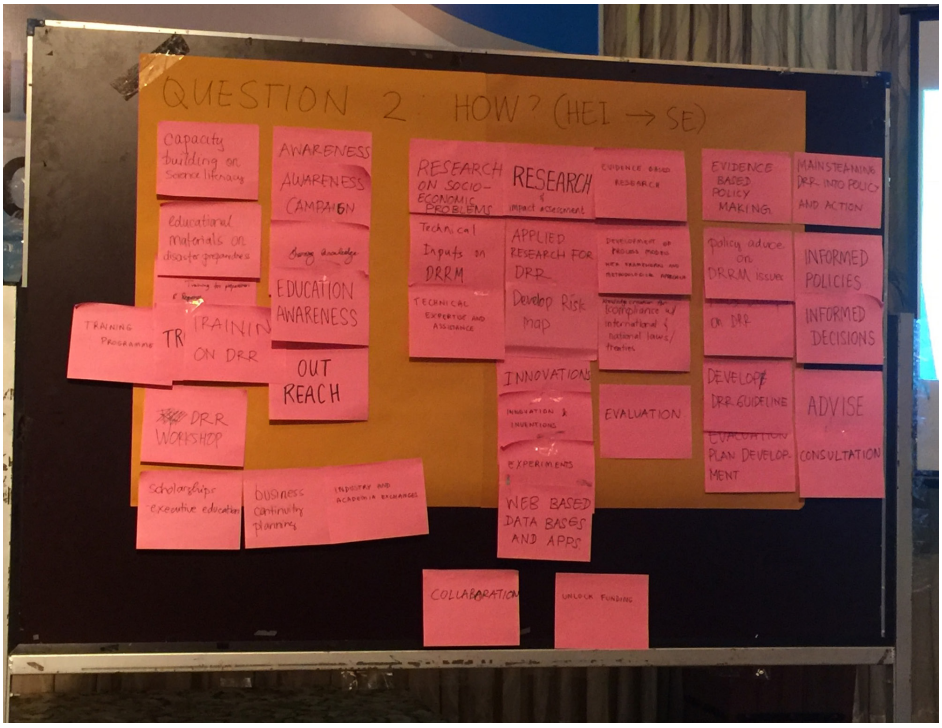

the Department of Zoology, University of Colombo, spoke of the need for science to engage with indigineous knowledge, and not to ignore the experiences of local people.

Interactive workshop on tsunami early warning interface

An interactive workshop explored the socio-cultural complexities that occur at the interface between upstream and downstream mechanisms of the tsunami early warning system. The workshop considered: 1. How the early warning interface can be defined? 2. Who are the key actors involved in issuing the warning, conveying the warning and order for evacuation (understanding the current status)? 3. What are the decision making structures involved in issuing the warning, conveying the warning and order for evacuation (understanding the current status)? 4. What are the complexities, strengths and shortcomings of the process? 5. How to overcome the shortcomings and strengthen the interface mechanism?

The CABARET partners considered the issues in respect of the five asian countries represented at the workshop: Indonesia, Maldives, Myanmar, Philippines, Sri Lanka, with each country reporting to the wider group on their findings. The results will inform a larger, Ocean wide study of the issues, and feedback to capacity building plans for the Indian Ocean Early Warning and Mitigation System (IOTWMS), to be reported at the Intergovernmental Coordination Group of IOTWMS event in Hyderabad, India during mid-2018.

Workshop on partnerships with socio-economic actors

A workshop explored experiences and case studies of how to engage with end-users/ socio-economic actors. The event began with European and Asian experiences of how HEIs can collaborate effectively with socio-economic actors in a range of fields. Professor Siri Hettige, Dr Ignacio Aguirre Ayerbe, Dr Maria Merino Gonzalez-Pardo, Dr Marlon Era, Dr Maria Caridad University of Colombo, Sri Lanka, De La Salle University, Philippines, IHCantabria, Spain, and Ateneo de Manila University, Philippines all shared their own case studies, considering challenges and benefits of such collaborations.

An interactive session was then held to share experiences and ideas on partnership building for MHEW and coastal resilience. Questions that were addressed included: 1. Who are the socio-economic actors that HEIs must engage with? 2. How can HEIs help socio-economic actors? 3. How can HEIs and socio-economic actors learn from each other? 4. What activities and resources need to be implemented to facilitate HEI and socio-economic actor partnerships?

Research sandpits

An important part of the agenda for the meeting in Kandy, Sri Lanka was research sandpit activities. These were part of the innovation hub (WP4) for the project. Sandpits are commonly used by research funders to stimulate new research ideas that they will then look to support / fund.

For those unfamiliar with the concept, sandpits are interactive workshops. They had a highly multidisciplinary mix of participants to drive lateral thinking and radical approaches to address major regional challenges in multi-hazard early warning, whether they be related to policy, research or education. The sandpits were intensive discussion forums where free thinking was encouraged to delve into the problems on the agenda to uncover innovative solutions. Each sandpit was proposed and led by a nominated representative from the partnership who defined the topic and facilitated discussions at the event.

The process included: Defining the scope of the issue; Agreeing a common language and terminology amongst diverse backgrounds and disciplines; Sharing understanding of the problem participants' expertise; Using creative and innovative thinking techniques in break-out sessions to focus on a problem; Turning sandpit outputs into a project or defined action.

For the Kandy meeting, several sandpit events were held in parallel. Participants could choose which sandpit was of most interest to them:

1. Enhancing disaster resilience education in Asia
2. Gaps in Evacuation Planning for Coastal communities – Case Studies in Myanmar, Sri Lanka & Philippines
3. Multi-hazard interface: Legal and institutional framework; further exploring the definition of downstream in the contact of multi hazard early warning systems

Photograph (above): Dr Ruben Borg at the University of Malta hosts a visit by Deputy Vice Chancellor of the Maldives National University Ms Aishath Shaheen and Lecturer Fathmath Shadiya.

4. Disaster and Climate Change Resilience in Small States Islands & Archipelagic States & Remote Coastal Regions
5. Public private partnerships - PPP Initiatives To improve Coastal resilience in Harbour projects
6. Local government and risk mapping: how HEIs can contribute to enhancing the capacity of local government in conducting risk assessment at the local level.

Emerging from across the six sandpits were a wide range of planned outputs and events, including:

- Short term scientific missions - Exchange Program for (A) Engineering Track (B) Disaster Science Track
- Indepth examination of issues relating to PPP initiatives in DRR and CCA in Port/Harbour projects. – Maldives, Sri Lanka and Indonesia
- Short term scientific missions - Gaps in Evacuation Planning for Coastal Communities: 3 partner countries to experience the status of the coastal communities (Myanmar – Early Oct 2018, Philippines– End of Dec 2018, Sri Lanka – Begin of Jan 2019)
- Education extension event - Conference and mentoring sessions with researchers, practitioners, and students, and Industry Open Event or Technology & Innovations Showcase.
- Roundtable disucssion on Multi-hazard early warning: components of the study- must include the types of stakeholders involved in the downstream system and identify who the decision makers are
- Training workshop on Disaster Resilience in Islands and Small / Remote Coastal Communities; Multihazard scenarios with reference to Preparatory activity in the definition of Hazard Maps. Training in the methodology; Development of material for the support of Local Government and local communities.
- Training workshop on Sustainability and Resilience, Training and capacity building for surrounding communities in sustainability tools, taking into account also resilience. Enhancing capacity of HEIs and Local Government and organisations to Sustainability tools and accounting for resilience through training.
- Training workshop to Enhance the capacity of HEIs and LG in conducting Risk Assessment through effective collaboration.

Future capacity building workshop

The next CABARET capacity building event will be held at the University of Yangon, Myanmar, in October 2018.

Maldives National University visit Malta to explore challenges and opportunities for small island states

The visit to Malta was initiated by participating academics from Maldives and Malta in the CABARET project during CABARET steering committee meetings held in Sri Lanka and Spain in 2017. Dr Shazla Mohamed, Dean of Faculty of Engineering, Science and Technology and Dr. Ruben Paul Borg, Senior Lecturer from faculty of the Built Environment, identified the need for collaboration between both institutions, especially in the context of small islands nations. The main areas of focus during the discussions were to explore opportunities of common interest in research and education. In February 2018, Dr Ruben invited, Deputy Vice Chancellor of the Maldives National University Ms Aishath Shaheen and Lecturer Fathmath Shadiya to visit University of Malta.

The main objective of the visit was to discuss the CABARET project research activities, areas of mutual interest and collaborative research including but not limited to Disaster Resilience in the built environment, resource management, materials in building and civil engineering and quality management.

The visit included the following activities:

- Visit to the University of Malta including research facilities in Materials, waste materials in construction, structures.

- Meeting with Pro Rector of the University of Mata Prof. Baldacchino who is also the Chair for Islands and Small States of UNESCO.
- Meeting with director of the Seismology Unit -Geoscience Department at the University, a Local Organization active in Emergency Action and with the Civil Protection Department.
- Visit to the Valletta World Heritage City – UNESCO World Heritage Site and European Capital of Culture for 2018.
- Visit to Quarries – open pit – in view of Resources for construction.
- Meetings with colleagues and PhD students and delivers a seminar on resource efficiency – the case of the Maldives
- Attendance as guests to the Institution of Civil Engineers United Kingdom – Evening research presentation on the 15th February 2018 – Dr Ruben is the chairman of the organization in Malta and a member on the ICE and rep for Malta
- Seminar to promote CABARET and discuss resilience and also resource efficiency in construction in small Island States – the case of Malta and the Maldives.

During the 5 days of the visit at the University of Malta, the following attainments were achieved:

- Dialogue to start a new Erasmus Agreement between Maldives and Malta.
- Invitation for the Maldives to participate in the 2nd International Sustainable Built Environment Conference on Resilience and Resources in Islands and Coastal regions.
- Invitation from Dr Ruben for collaborative research regarding small island states.
- Explored ways to incorporate staff exchange between Maldives National University and University of Malta.
- The University of Malta offered full tuition free scholarships for post graduate courses focusing on climate change, commencing in October 2018.

The visit was very fruitful overall with mutual areas of interest and activities identified. It is expected to formalize the collaboration at the earliest through a Memorandum of Understanding.

Symposium held in Sri Lanka on Creating University – Industry Links

IThe "Symposium on Creating University-Industry Links" was held on 12th March 2018 at the Ministry of Primary Industries, Battaramulla, Sri Lanka. The symposium was jointly organized by the Ministry of Primary Industries (MOPI), Sri Lanka and University of Central Lancashire (UCLan), UK in partnership with CABARET (Capacity Building in Asia for Resilience EducaTion) and ASCENT (Advancing Skills Creation to Enhance Transformation) projects funded by the EU Erasmus+ programme. Prof. K.D.N. Weerasinghe – Consultant of MOP, and Dr. Champika Liyanage – Reader at UCLan, were the co-chairs of the Symposium. The symposium brought together more than 60 academics, policy makers, industry professionals and financial institutions involved in university – industry collaborations. The event consisted of several inaugural speeches from distinguish invitees, thematic presentations of related to university – industry links and a final roundtable discussion. The distinguished invitees included Mr. Daya Gamage (Hon Minister of Primary Industries); Eng. Bandula Wickramarachchi (Secretary of MOPI); Prof. Ananda Jayawardana (Director general of National Science Foundation); Prof. P.S.M. Gunarathna (Vice Chairman of University Grants Commission); Prof. Sampath Amaratunge (Vice Chancellor of University of Sri Jayawardenepura); Prof. Kapila Perera (Vice Chancellor of University of Moratuwa); and Dr. Martin Brown (Director of Business Development at UCLan). The symposium unveiled a number of practical implications to develop university – industry links based on both Sri Lankan and UK experiences. During the roundtable discussions, current status, best practices and challenges related to creating university – industry linkages in Sri Lanka were discussed in-detail. The symposium concluded by identifying prospective policy priorities to improve university – industry linkages in Sri Lanka.

Photograph (below): Dr. Champika Liyanage, from UCLan in the UK, co-chaired a Symposium on Creating University-Industry Links in Colombo, Sri Lanka, which included a speech by Hon Minister of Primary Industries, Mr. Daya Gamage

UK, Sri Lanka and Indonesia launch project to compare upstream-downstream interfaces of tsunami early warning systems in Indian Ocean

The Bandung Institute of Technology in Indonesia and the University of Huddersfield in the UK are leading a study into the interface between upstream-downstream of tsunami early warning systems. The initial study will examine the interfaces at the national level in Sri Lanka and Indonesia, with a view to extending the study to cover all 28 countries in the Indian Ocean.

The Universities are working closely with the National Disaster Management Agency (BNPB) and Meteorology, Climatology and Geophysical Agency (BMKG) in Indonesia, the University of Colombo, the Federation of Sri Lankan Local Government Authorities (FSLGA), the Disaster Management Centre, the Ministry of Disaster Management, and the Department of Meteorology in Sri Lanka, and the Asian Disaster Preparedness Centre (ADPC) and IOC – UNESCO ICG/IOTWMS at the regional/international levels.

Background to the study

A 2015 United Nations (UN) report estimates that each year, an additional 60,000 people and $4 billion (US$) in assets are exposed to the threat of tsunami hazard. As demonstrated by the human and economic losses from the 2004 Indian Ocean and 2011 Tōhoku disasters, tsunamis inflict death and damage through violent, powerful flooding along the world's coastline. Tsunamis are extremely deadly. At an average of 4,600 deaths per disaster, the toll has surpassed any other natural hazard. Estimates suggest that tsunami deaths and destruction will increase over time owing to population growth, migration to coastal areas, climate change and the concentration of assets in coastal regions. Recent research suggests tsunamis will become more frequent as global warming changes the earth's crust [3].

Experience over recent years of the impacts of tsunamis has shown that inadequate preparation for, and response to, emergency situations have contributed to widespread damage and the avoidable loss of lives and livelihoods. These hazards set back economic development in both developed and developing economies, and tend to disproportionally affect the most vulnerable in society. The shortcomings in preparation have been due to a lack of warning through poor regional detection and communication systems, but they also reflect inadequate awareness, planning and coordination.

Tsunamis can be broadly classified as local, where coastal residents feel an earthquake and have only minutes before the tsunami begins flooding, or distant, where coastal residents do not feel the earthquake and have an hour or more before tsunami flooding commences. In both types, an effective end-to-end early warning system is fundamental to mitigate losses. The decision on whether to evacuate an area is central to this system, but also fraught with difficulties. Failure to evacuate in a timely manner can leave tens of thousands of people exposed to a tsunami wave. Unnecessary evacuation and false alarms are also costly, as demonstrated by the Alaskan Earthquake in 1986, which is estimated to have cost Hawaii $40M. A false alarm is also liable to increase complacency among communities, thereby hindering preparedness for future tsunami threats.

The Indian Ocean Tsunami on 26th December 2014 resulted in the loss of over 230,000 lives including over 2,500 foreign tourists, and the displacement of over 1.6 million people around the Indian Ocean, with economic losses of about $14 billion. At the time, no tsunami warning system existed for the Indian Ocean. Following the disaster, the Intergovernmental Oceanographic Commission (IOC) of UNESCO was given the mandate to develop and implement an Indian Ocean Tsunami Warning and Mitigation System (IOTWMS). An Intergovernmental Coordination Group (ICG) for the IOTWMS was established by the IOC Assembly in July 2005 (Resolution IOC-XXIII-12). Member States of the ICG/IOTWMS include 28 countries: Australia, Bangladesh, British Indian, Ocean Territory, Comoros, Djibouti, France, India, Indonesia, Iran, Kenya, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Myanmar, Oman, Pakistan, Seychelles, Singapore, Somalia, South Africa, Sri Lanka, Tanzania, Thailand, Timor-Leste, United Arab Emirates, and Yemen. 22 of these are DAC countries, with ten of them categorised as least developed. After 8 years of international collaboration and development, facilitated and coordinated by IOC UNESCO, the IOTWMS became fully operational on 31st March 2013 with Regional Tsunami Service Providers (RTSPs) established by Australia, India and Indonesia.

An end-to-end tsunami warning system begins with the upstream rapid detection of a tsunami wave, including detection, verification, threat evaluation, and forecasting. It ends with a well prepared community that is capable of responding appropriately to a warning, including delivery of public safety messages, risk assessment and management, initiating national counter-measures, and preparing and implementing standardised reactions.

Recent studies and practical experiences from the Indian Ocean region suggest that more attention needs to be paid to the cognitive and normative challenges in positioning the tsunami early warning systems and preparedness in the wider context of social change in the coastal societies and communities at risk, and for critical reflection of 'on-the-ground' experiences and lessons learnt. Although the ICG of IOTWMS has been largely successful in promoting regional cooperation to develop the technical hazard detection infrastructure, progress at the national and sub-national level has been far more variable. A review of national reports, recent earthquake and tsunami threat responses, and practice evacuation exercises suggests uneven progress across the region, with some high-risk, low-capacity countries falling behind.

Interface study

The interface between upstream and downstream activities is vital, as it involves a wide array of jurisdictional agencies and response partners, including RTSPs, tsunami national contact points, and a range of sub-national emergency operational centres and related actors. The problem has technical, legal and socio-cultural complexities. RTSPs for the IOTWMS, based in India, Indonesia and Australia, have the most sophisticated technical information available to issue warnings. However, national legal frameworks within member states do not enable them to issue evacuation warnings directly. This is the responsibility of each member state, which have varying legal frameworks, technical capacities to forecast potential impacts, and socio-cultural approaches. For example, the ability to create accurate, real-time tsunami warning information through tsunami energy estimates, flooding maps, and tsunami-induced currents, varies across member states, but can be critical in determining potential local impacts. Using whatever information is available and depending on the legal frameworks of a country, the decision on whether to evacuate may be taken at the national or various sub-national levels, sometimes down to local emergency operation centres. There is considerable debate as to which level is best able to make such decisions. However, there is a lack of understanding into the approaches of different countries, or their effectiveness.

This study seeks to provide a much clearer insight into what is happening at the national and sub-national levels, and the options available to member states if they wish to improve their standard operating procedures.

Planned activities include development an inter-disciplinary analytical framework and survey instruments; two field studies in coastal regions of Indonesia and Sri Lanka, focusing on the interface of end-to-end warning system at the national and sub-national level; a briefing paper for presentation at the next meeting of the ICG for the IOTWMS, laying the groundwork for informing future policy development within IOTWM; public engagement activities that will seek to engage communities in the data collection; and, a capacity building event with representatives of the 28 member states of the IOTWMS, to be held alongside an ICG IOTWMS event in Hyderabad, India during mid-2018.

Key findings of the study will be shared in future issues of this newsletter.

Write for CABARET Newsletter

The CABARET project provides an opportunity for people to share knowledge and experience. This newsletter is written by the CABARET membership for the CABARET membership, and also for other readers working with national and international NGOs, UN agencies, government and donor institutions, academics, and independent consultants.

We, the Editors of CABARET newsletter, welcome contributions from CABARET partners and associate partners. We are also pleased to consider articles submitted by anyone involved in researcy capacity building within the context of disaster resilience among coastal communities.

If you have knowledge and experience to share, please consider making a contribution.

The scope of contributions should be consistent with the aims of CABARET.

Typically, we welcome contributions in the following categories (word counts are advisory):

- News and reports from activities and events linked to the project (100 - 500 words)
- Reports on developments in the field / projects that are being investigated by partners – these do not have to be activities directly linked to the project, but should be relevant to project partner institutions (100 - 500 words)
- Useful Resources – relevant publications, websites (up to 20 - 40 words)
- Upcoming events (20 words)

We welcome suggestions for alternative types / styles of contribution.

If you have an idea for an article that you would like to develop, the Editors would be pleased to discuss it with you - send an email to Ms Kinkini Hemachandra (K.Hemachandra2@hud.ac.uk)

The Editors reserve the right to edit any contribution

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European partners	
University of Huddersfield	United Kingdom (Lead Institution)
University of Central Lancashire	United Kingdom
University of Cantabria	Spain
University of Mining and Geology	Bulgaria
University of Malta	Malta
Riga Technical University	Lativa

Asian partners	
University of Moratuwa	Sri Lanka
University of Peradeniya	Sri Lanka
Bandung Technical Institute	Indonesia
Andalas University	Indonesia
Maldives National University	Maldives
De La Salle University	Philippines
Ateneo de Manila University	Philippines
Mandalay Technological University	Myanmar
University of Yangon	Myanmar

Associate partners
IOC-UNESCO
Asian Disaster Preparedness Center
Federation of Sri Lankan Local Government Authorities

Further information

For further information on the CABARET project, contact Professor Richard Haigh (r.haigh@hud.ac.uk) and Professor Dilanthi Amaratunga (d.amaratunga@hud.ac.uk).

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