Climatic Hazards Programme

Future Cities: Science to Action for Building Resilience of Urban Communities to Climate Induced Physical Hazards

by Prof. Dr. Joy Jacqueline Pereira & Lord Julian Hunt

The Newton-Ungku Omar Fund in Malaysia involves the British Council as one of several UK delivery partners working with the Higher Education International Unit and in partnership with the Malaysian Industry-Government Group for High Technology (MIGHT) as part of the Science to Action (S2A) initiative undertaken by the Government of Malaysia. Unveiled by the Prime Minister in November 2013, the S2A has provided a new impetus for MIGHT in its effort to ensure a wider reception of Science, Technology and Innovation (STI) by its key stakeholders in the nation - the industry, the people and the policymakers. Under this initiative, the focus will be on growth through strategic partnerships, technology acquisition and nurturing, capacity building as well as strengthening of growth through policy interventions and flagship programmes. The Newton-Ungku Omar Fund facilitates the aspirations of the S2A with particular focus on climate change and urbanization. Cities in Malaysia are increasingly exposed to physical hazards such as flash-floods, landslides, subsidence, strong winds and air pollution. Losses are not adequately estimated but the majority impacted are poor and vulnerable populations. Climate change and expansion of cities will lead to escalation in flooding and landslides. Physical scientists from multi-disciplinary backgrounds need to work together to deliver integrated approaches for multi-hazard assessment and delineate areas susceptible to urban hazards. Climate change and expansion of settlements is expected to escalate climate induced hazards such as flooding, landslides, typhoons, etc. both in its extent and frequency as well as its occurrence in new areas within urban centres. A first step towards adaptation to future climate change is reducing vulnerability and exposure to present climate variability. Science-based products and services play a critical role in enhancing the capability of governments and the private sector in managing risk information and financing.

Led by Professor Lord Julian Hunt of the Malaysian Commonwealth Studies Centre (MCSC), Cambridge and Professor Joy Jacqueline Pereira of Universiti Kebangsaan Malaysia's Southeast Asia Disaster Prevention Research Initiative (SEADPRI-UKM), six institutions are collaborating in a "pump-priming" initiative supported by the Institutional Links Programme of the Newton-Ungku Omar Fund administered by the British Council and MIGHT. The initiative is entitled "Future Cities: Science to Action for Building Resilience of Urban Communities to Climate Induced Physical Hazards". In addition to MCSC and SEADPRI-UKM, the partner institutions are University of Malaya's Geology Department, University College London, IUGS Commission on Geoscience for Environmental Management (IUGS-GEM) and Geological Society of Malaysia.

The joint Malaysia-UK initiative aims to bring together scientists working on various aspects of physical hazards and risks in a changing climate with a particular emphasis on large urban areas. The one-year initiative commenced on 1 April 2015 with the following objectives:-

- Provide a platform for researchers and practitioners working on physical hazards in Malaysia to link with counterparts in the UK;
- Build capacity to innovate, advance practices, scientific tools and techniques relevant to the country; and
- Lay the foundation for delivering science based products and services through proposals that will be developed within the initiative.

Future work will be designed to enhance capacity to conduct multi-hazard assessments and identify areas susceptible to floods, landslides and subsidence within cities; advance modelling of climate extremes and atmospheric hazards; and promote professional development. The emphasis will be to develop effective products and services for reducing risks at the neighbourhood level, focusing on the bottom 40% income group of Malaysians. The ultimate goal is to deliver new innovative business models for disaster risk reduction, driven by consortiums with multidisciplinary and multi-sector representation. This will directly support the National Science to Action Programme and the National Policy on Climate Change to promote societal well-being and climate resilient development.

The MCSC's long standing linkage to the Commonwealth has facilitated the establishment of the Asian Network on Climate Science and Technology (ANCST), based in Malaysia and coordinated by SEADPRI-UKM. The Network serves as a conduit to facilitate exchange knowledge and expertise. The initiative funded by Newton-Ungku Omar Fund has flourished the linkage between UK and Malaysia by involving additional partners working on climate induced physical hazards. More importantly project partners in Malaysia and the UK have been able to make use of the regional linkages that have already been established through ANCST, to engage with the wider research and innovation community in Asia. An example is the Workshop on Climate Change and Disaster Resilience – Post Sendai 2015, Manila, Philippines on 16-17 October 2015 organized by ANCST and partners, where project members from Malaysia and the UK shared their expertise. The event was also used to introduce the Science to Action Initiative of Malaysia to an Asian audience.

The initiative has also enabled a series of visits between researchers in Malaysia and the UK to lay the foundation for future work. Proposals have been jointly developed to seek funding for development of science based products and services for multi-hazard assessments to address the risk of climate change in urban areas. In addition, field visits and other capacity building activities have also been implemented periodically in both countries to enhance capacity of researchers and practitioners working on physical hazards. Plans are underway to conduct further joint Malaysian-UK activities to enhance capacity in the Asian region.