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The Barriers to Research and Innovation in Disaster Resilience in Higher Education Institutions in Asia

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Abstract

This paper reports the findings of a research study investigating the barriers to Research and Innovation (R&I) in Disaster Resilience (DR) in Higher Education Institutions (HEIs) in Asia. The scope of the study is limited to three Asian countries, i.e. Bangladesh, Sri Lanka and Thailand, due to their role in the international collaboration entitled ASCENT (Advancing Skills Creation to Enhance Transformation), which contributes to the development of research capacity building in disaster resilience ensuring sustainable and inclusive socio-economic growth in these Partner Country HEIs. Responses received from 213 semi-structured interviews and 530 survey questionnaires are used to examine and prioritize the aforementioned barriers in R&I in HEIs in Asia. Findings reveal, amongst others, that there is a crucial need for R&I skills enhancement through implementation of clear and adequate policies. Having a strong policy support, in turn, could play an important role in providing incentives to staff (academic and research staff), increasing awareness on R&I initiatives, and motivation to carry out R&I activities. Lack of training and development on R&I was surprisingly one of the lowest ranked barriers from the survey analysis, although it was the most frequently mentioned barrier during the interviews. Although this is a mixed result, training and development should be considered a priority for promoting and improving R&I in HEIs as such initiatives could help overcome many other barriers such as lack of staff R&I skills, motivation, awareness, and lack of research related performance.

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1. Research and Innovation in Disaster Resilience in Higher Education Institutions in Asia

Higher Education Institutions (HEIs), by definition, are any public or private colleges, universities, training or technical institutes that offers a prescribed course of higher education learning and offers an award in the end [1]. HEIs play an innovative role in knowledge-based societies and maximize "capitalization of knowledge" by establishing direct links and close integration with the industrial world [2]. As a result, HEIs' performance in Research and Innovation (R&I) is being viewed as critical to the growth in knowledge-based and intellectual assets, including potential for increasing international competitiveness and individual opportunities. This includes reforming and reinforcing the transformation of education ecosystems needed for the fourth industrial revolution [3].

Research is an important aspect and a core function for HEIs. The quality of research outputs and research programs not only determine the ability to teach and the quality of teaching in HEIs, but also their ability to deliver skills and research for productivity and innovation [4]. Alternatively, poor quality of research can hardly contribute to any active engagement, mentoring or value creation HEIs performance [5]. Evidence substantiate that research can enhance HEIs reputation, contribute to knowledge development, and introduce innovation to solve real world problems, eventually resulting into research capacity enhancement and research infrastructure development. Despite everything, research capacity development in HEIs is continuously declining and it remains an issue of concern to HEIs [4].

An equally significant aspect for HEIs is innovation. Innovation is the formation of new ideas or the necessity to respond to change in order to add more value to the societal contribution of HEIs [6]. Innovation occurs at various levels, including product innovation, process innovation, marketing innovation and organizational innovation. These are inevitably important to any country as these contribute to competitiveness and economic diversification in emerging economies [7]. Europe has been able to technically advance towards a low-carbon economy due to the innovations carried out in the climate-change mitigation technologies [8]. In contrast, developing countries are having difficulties in ensuring the diffusion of these technologies. Thus, there is a need to enhance their capacity in innovation.

The knowledge divide is deep and heavily tilted in the favour of developed countries. Developing countries suffer from a lack of resources - both financial and human resources in research and development. Therefore, these countries need to improve their capacity to produce knowledge domestically and absorb the knowledge produced elsewhere [9]. Building capacities in R&I in the HEIs in Asia to support Disaster Resilience (DR) Research in particular are specifically needed due to the fact that Asia is continuously facing risk of vulnerability in terms of the fast-changing conditions of human-environment systems and increasing natural disasters, accompanied by huge losses to human lives. [10]. It is increasingly recognised in policy fora that an increasing risk of disasters will undermine socio-economic development gains and, in reverse, low levels of socio-economic development increases disaster risk [11].

This paper is based on a project called ASCENT (Advancing Skills Creation to Enhance Transformation). ASCENT is an Erasmus+ programme aimed to addressing R&I capacity strengthening for the development of societal resilience to disasters. The programme is a collaboration between EU and three Asian countries to strengthen the ability of the Asian partner HEIs (03 from Bangladesh; 03 from Sri Lanka; and 02 from Thailand) to respond to their research needs in DR. Therefore, the scope of the project/paper is limited to three Asian countries, due to their role in the project. These three countries are involved in the project due to their strategic situations as discussed here:

Across these three countries, Bangladesh is widely recognized to be one of the most climate vulnerable countries in the world. Every year, Bangladesh faces many natural disasters such as droughts, floods, water-logging, cyclones and tidal surges, tornados, thunderstorms, river/coastal erosion, landslides, salinity intrusions, and other extreme weather events. Asia Pacific Disaster Report 2015 (UN-ESCAP) has shown Bangladesh as one of the most vulnerable among 15 countries with high exposure to disaster risks [12]. Sri Lanka, being a small island in the Indian Ocean in the path of two monsoons, is mostly affected by weather related hazards. Floods and droughts are the most common hazards experienced in Sri Lanka. Sri Lanka is also prone to hazards such as landslides, lightning strikes, coastal erosion, epidemics and effects of environmental pollution. In 2004, almost two-thirds of the Sri Lankan coast was affected by the Indian Ocean tsunami highlighting the country's vulnerability to low-frequency but high impact events.